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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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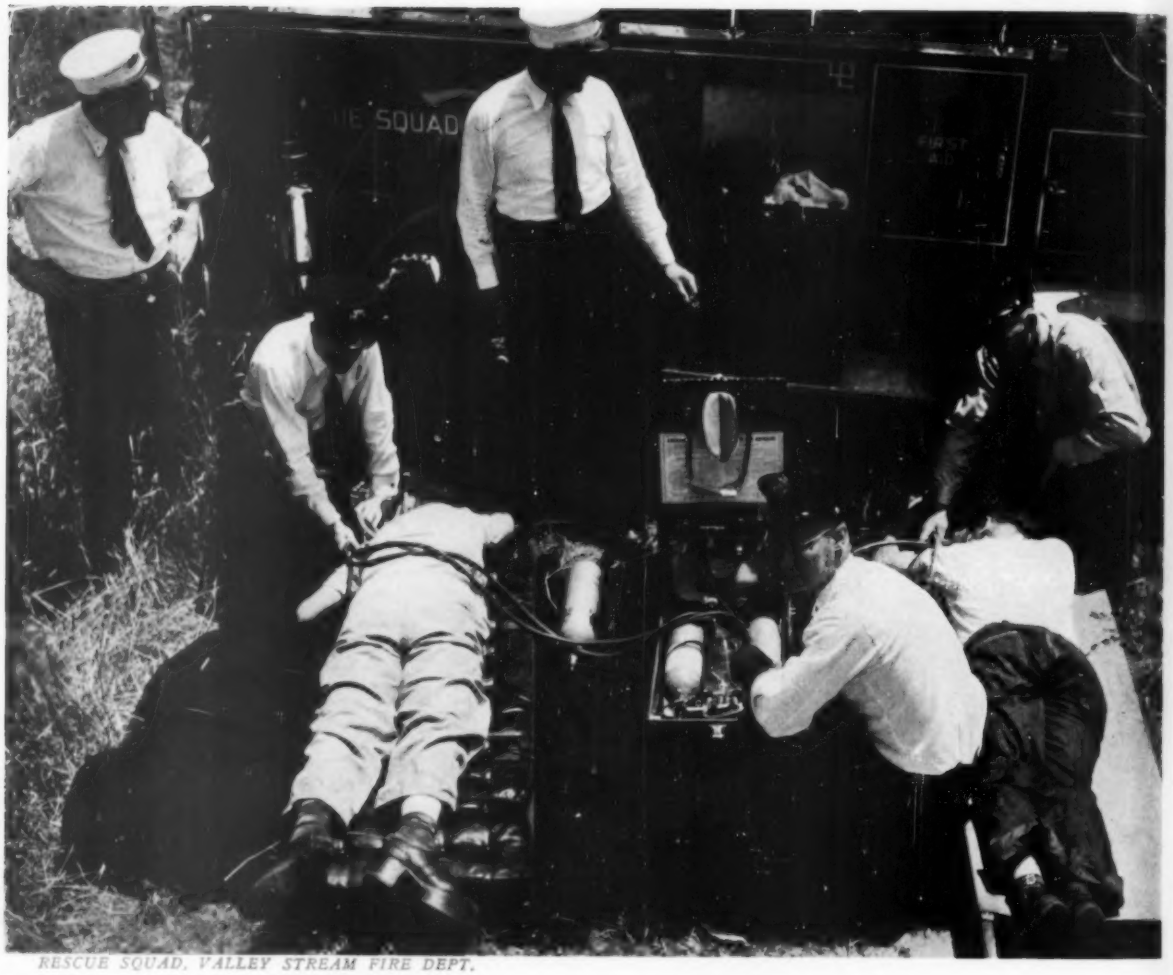
FEBRUARY, 1945

Vol. 98, No. 2

Liberty Ship Undergoes Fire Control Tests at Fort McHenry (See Article Inside).

A CASE · SHEPPERD · MANN PUBLICATION



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With our dual apparatus, you can breathe independently for two victims of smoke suffocation, electric shock, gas poisoning, drowning or other asphyxia at once. That's why many departments are putting in this double purpose unit which costs only a little more than the single unit.

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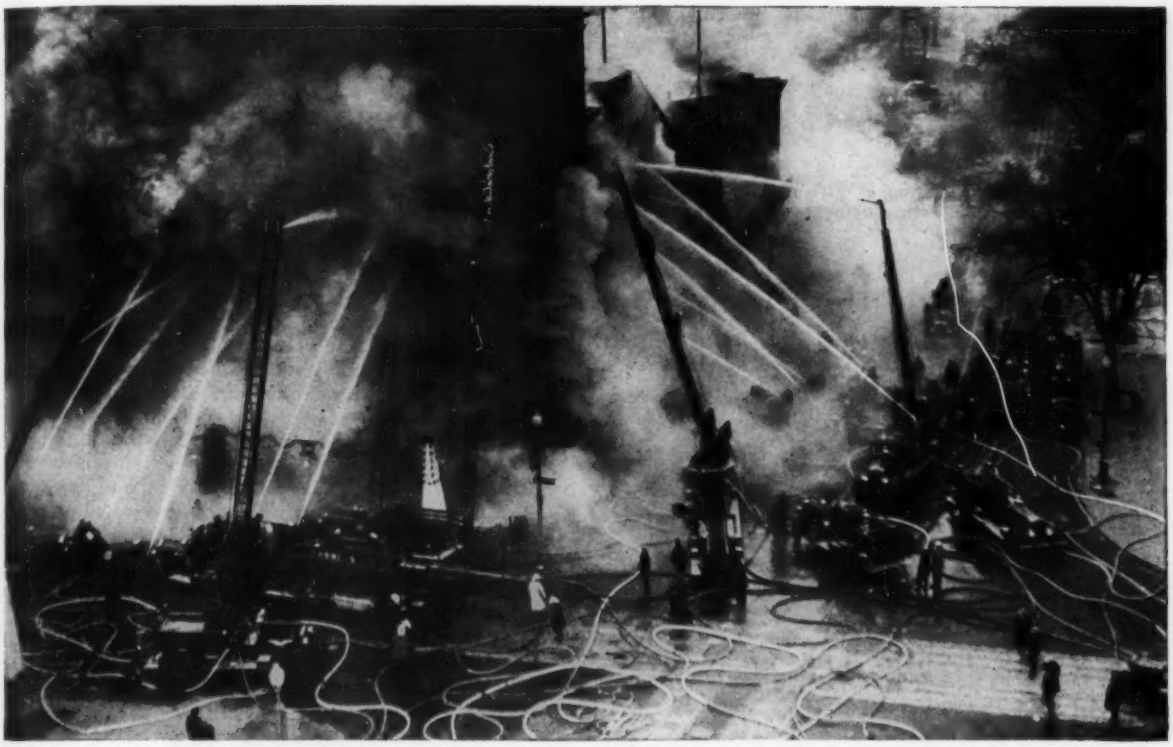

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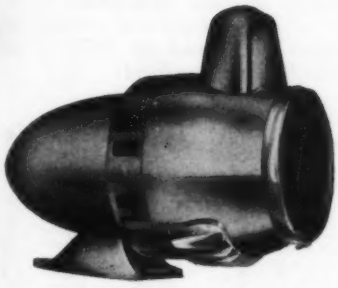
WITH FEDERAL SIRENS



A FEDERAL Siren that combines a powerful tone and a brilliant oscillating red light.

Making a fast start to a fire isn't enough—it is equally important to get there safely in the shortest possible time. That is where FEDERAL Sirens come into efficient use. They offer the utmost in audible signals to which may be added visible warning, if desired.

The tone roar of FEDERAL Sirens is distinctive, piercing, and powerful. It draws instant attention far ahead of fast moving apparatus. FEDERAL visible warnings are of two types—a flashing light and an oscillating light. These brilliant red beams are unusually effective for warning unwary motorists and pedestrians.

Your fire apparatus will travel faster and with far greater safety when you install FEDERAL Sirens.

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FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

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FRED SHEPPERD
Editor

ROI B. WOOLLEY
Assistant Editor

Things Are Happening!

THE Board of Directors of the International Association of Fire Chiefs recently met in New York to discuss important matters affecting the fire service: manpower shortage; remuneration of firemen; fire apparatus specifications and improvements; disposal of surplus O C D fire fighting equipment; post-war radio communications for the service; and new techniques in fighting fires resulting from airplane crashes, on shipboard and otherwise related to the war effort.

● It was interesting to observe how frequently reference was made to FIRE ENGINEERING during these deliberations. The unique position of this publication as the "business bible of the fire service" was thus attested to, again and again.

● Things are happening mighty fast in the field of fire prevention and fire suppression, these days, and one of the best ways to keep abreast of these developments is to follow the example of these wide-awake Directors of the International Association —keep each issue of FIRE ENGINEERING close at hand.

The Publishers

FIRE ENGINEERING

The Journal of the Fire Profession since 1877; published on the fifteenth of each month by Case-Shepperd-Mann Publishing Corp., 24 West 40th St., New York 18, N. Y., also publishers of *Water Works Engineering, Sewage Works Engineering*, etc. ¶Subscription price U. S. and Latin America, $2.50 a year; Canada, $3; Foreign, $3.50; Single copies, 25c. ¶Member of Audit Bureau of Circulations and Associated Business Papers, Inc. ¶Entered as second-class matter April 15, 1929, at the Post Office at New York, N. Y., under Act of March 3, 1879. ¶Contents of this issue copyrighted, 1945, by Case-Shepperd-Mann Publishing Corp. President and Advertising Director, KARL M. MANN; Vice-President and General Manager, I. HERBERT CASE; Secretary and Editorial Director, FRED SHEPPERD; Assistant Advertising Director, WALTER H. FREDRICKS; Advertising Manager, WILLIAM J. GIBSON; Circulation Manager, W. H. TOPHAM. CHICAGO OFFICE: W. S. CLEVENGER and L. M. ROCHE, 6 No. Michigan Ave., Chicago 2, Ill.; SAN FRANCISCO: CHARLES H. WOOLLEY, 605 Market Street, San Francisco 5, Calif.; LOS ANGELES: AUGUST HAURIN, 6000 Miramonte Blvd., Los Angeles 1, Calif. ¶Printed in U. S. A.

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ST. LOUIS ADDS ANOTHER MACK

Once a mere trading post, the pioneer city of St. Louis is now a great business and banking center. It is essential that she have the ultimate in fire-fighting equipment. Mack Fire Apparatus of all types has served her well for many years. That's why St. Louis chose this new 1,000-gallon Triple Combination Pumper. This, and other types, are being used extensively throughout St. Louis and her suburbs.

MACK MANUFACTURING CORPORATION, FIRE ENGINE DIVISION
EMPIRE STATE BUILDING, NEW YORK 1, N. Y.

Mack
FIRE APPARATUS

If your community needs additional fire-fighting equipment or replacements, think of Mack. Remember, Mack Fire Apparatus is backed by the greatest engineering resources in the industry.

IF YOU'VE GOT A MACK, YOU'RE LUCKY... IF YOU PLAN TO GET ONE, YOU'RE WISE!

ONE MINUTE *Quiz* ABOUT FMC

These are the questions that firemen are asking

Check YOUR ANSWERS HERE

		YES	NO
1	Can You Have Super Fire-Killing Fog Without High Pressure?	☐	☐
2	Do You Use Water More Effectively With a High-Pressure System Than With a Low-Pressure System?	☐	☐
3	Is There Much Water Damage When the FMC High-Pressure Fog Fire Fighter Is Used?	☐	☐
4	Has FMC High-Pressure Fog Been Tested and Proven on All Types of Fires?	☐	☐
5	Is It Possible to Change Over a Low-Pressure System to a High-Pressure System by Just Adding a Fog Fire Gun?	☐	☐
6	Was FMC High-Pressure Fog Fire Fighting Originated by the John Bean Mfg. Co.?	☐	☐

Here are the answers to the questions above!

1 No. In fighting fire with fog—*you must have high pressure.* The FMC High-Pressure Pump easily delivers and maintains *800 lbs. pump pressure*—better than *600 lbs. nozzle pressure.*

2 Yes. The high pressure gives you a combination of high velocity and finely-atomized water—just what you need to *cool* and *smother* flame. Every droplet of water is broken up into thousands of tiny particles that can be *"blasted"* into the source of the fire. One gallon of this finely-atomized fog—properly used—has the fire-quenching possibilities of many times that of low-pressure water.

3 No. The high-pressure fog quickly turns into steam, causing little or no water damage.

4 Yes. FMC High-Pressure Fog has proved its worth at hundreds of town, rural and airport fires. Firemen say it is one of the greatest contributions ever made to fire fighting. Investigate! Write—today—for complete information.

5 No. It's the pressure and the pump that count! To create high pressure—you would need the famous FMC High-Pressure Pump—built only by Bean.

6 Yes. High-pressure fog for fire fighting was originated by the John Bean Mfg. Co. a number of years ago. And—since then—a system has been developed which is revolutionizing fire-fighting technique.

BUILDERS OF BEAN HIGH-PRESSURE

HIGH-PRESSURE FOG FIRE FIGHTING

600 lbs. AT THE NOZZLE!

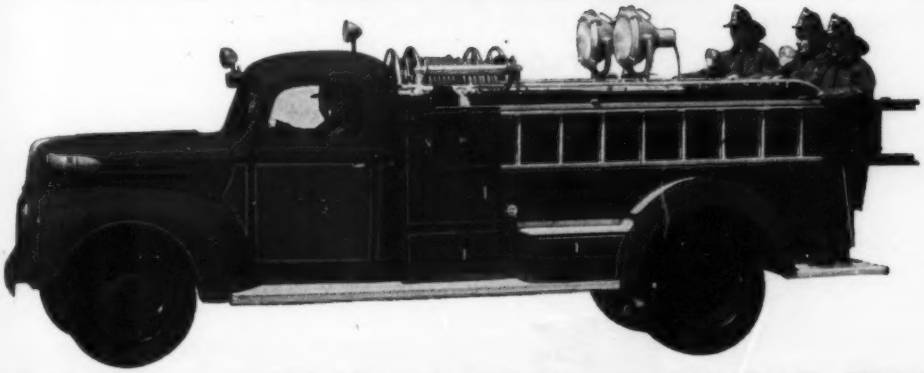
The FMC Fog Fire Gun—built only by Bean—is designed especially for High-Pressure fire fighting. There's nothing else like it!

Note these features:

1. **PROTECTIVE SPRAY.** Special spray protects face and shoulders from heat.
2. **ADJUSTING BARREL.** By turning barrel, flow can be changed from a straight "power" stream to a close-up fog for any type of fire.
3. **TRIGGER GRIP.** Gives natural position to arm and grip and is easy to hold. No fatigue.
4. **GUN LOCK.** Stream can be set in any pattern and locked there if desired. Relieves arm muscles.
5. **HOSE SWIVEL.** Eliminates bothersome twisting of hose.

FMC FOG FIRE GUNS IN ACTION! Men at left are using the straight fog stream. This photograph was made to show the carrying power and reach of the fog. By turning the barrel slightly, the flow can be changed to the full fog cloud—shown in the illustration above.

A ONE-MAN JOB! With pressure on, the FMC Fog Fire Fighter Gun practically carries itself and can be poked into cellars, attics or holes in partitions. If the fire is intensely hot, it is possible to use the protecting spray nozzle to protect your face from the heat and work right up to effective distance from the fire.



STANDARD FMC FOG FIRE FIGHTER. *A self-contained fire-fighting unit. Carries its own water supply and complete fire-fighting equipment. Provides two guns of 30 gallons each at 600 lbs. nozzle pressure.*

FMC *Original* HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

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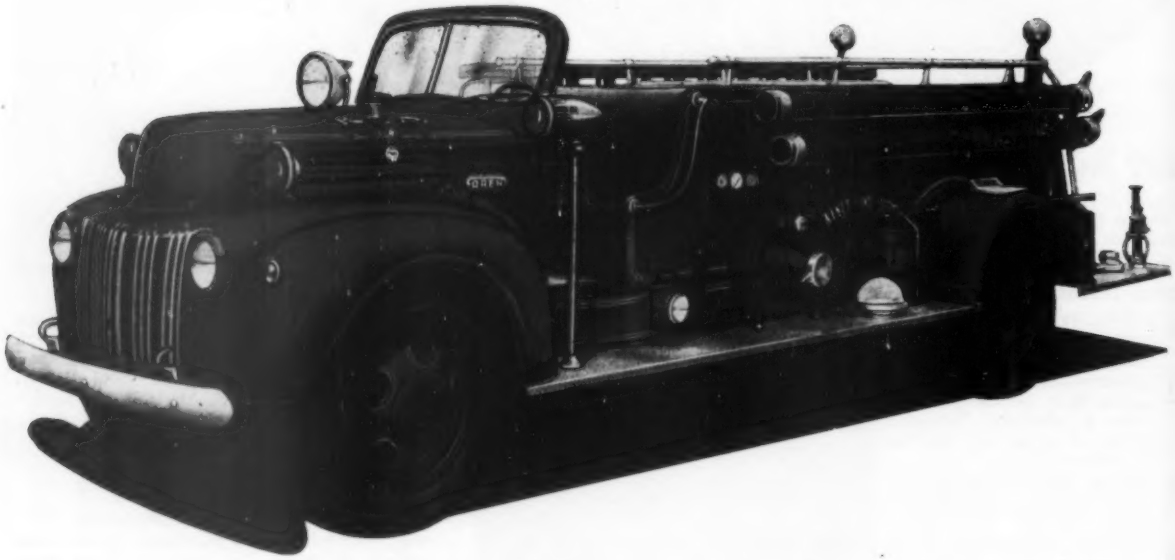
PUMPS FOR OVER SIXTY YEARS

FIRE APPARATUS CUSTOM-BUILT

BY

OREN

"THE SOUTH'S ONLY FIRE TRUCK MANUFACTURER"



This custom-built **OREN** is a triple combination pumper with a 500 G. P. M. Hale Centrifugal Pump and 200-gallon booster tank. Mounted on Ford chassis and used for protection of town and surrounding rural areas. This pumper was specially built and designed for and recently delivered to the Town of Kenly, North Carolina.

DEMAND AND GET **OREN** APPARATUS

You get the best in the field backed by years of building experience. Also you get apparatus specially built and designed to meet your individual needs. Write for catalog and information.

OREN FIRE APPARATUS COMPANY

ROANOKE, VIRGINIA

AKRON REVOLVING CELLAR NOZZLE

★ A necessity for efficiently fighting cellar fires. The revolving barrel has machined orifices set at different angles and throwing different size streams. Operates on large ball bearings set in non-corrosive metal retainers.

Illustration shows Style No. 535, with ⅜" diameter, 3 center row orifices and 6 others set at angles. Butt end threaded for 2½" hose. Rocker or pin lugs. Overall length 5⅝".

Also made in Style No. 536, with ¼" diameter, 3 center row orifices and 3 others at angles. Base threaded for 1½" hose. Overall length 8½".

Finish — polished bronze.

AKRON BRASS MFG. CO., INC.
WOOSTER, OHIO

AKRON BRASS
FIRE FIGHTING EQUIPMENT

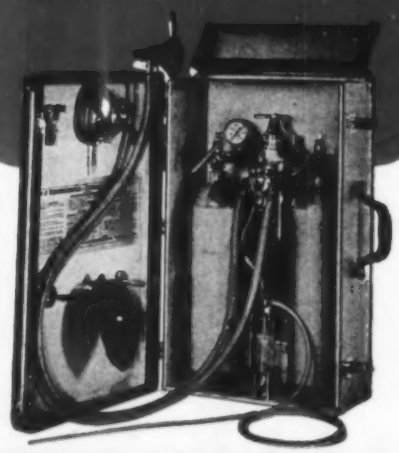
WHEREVER YOU FIND LIFE SAVING AT ITS BEST

Photo courtesy Philadelphia Fire Dept.

Preference for the

E & J

RESUSCITATOR
INHALATOR and
ASPIRATOR



EVERY fire chief knows that in judging the value of resuscitation equipment or any other appliances, an ounce of performance is worth a ton of sales talk.

That's why we say, ask any user what he thinks of the E & J Resuscitator and you'll quickly understand why it is so widely used and enthusiastically preferred—by progressive Fire Departments, Hospitals and Large Industries the country over.

When you buy an E & J, you get time-tested, proven dependability which, in life saving, is the all-important element.

★ *For further information write any of our distributors listed below.* ★

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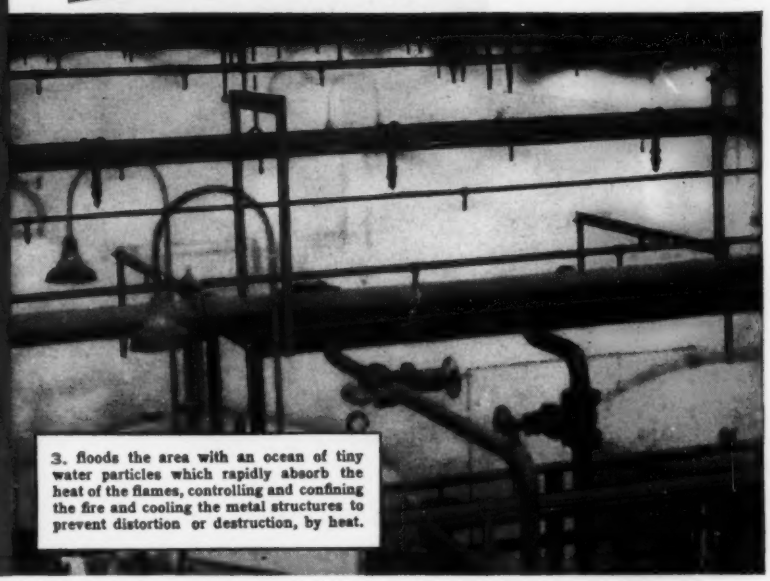
WAR DEPENDS ON RUBBER—

SYNTHETIC RUBBER depends on . . . WaterFOG

1. A leak permitting escape of highly flammable vapors from these huge butadiene and styrene production tanks . . . a spark . . . and the entire area of this important synthetic rubber plant would be threatened with destruction . . . EXCEPT FOR

2. . . . the fact that this synthetic rubber plant is protected by the most effective method of cooling and extinguishing fires in highly flammable vapors or liquids. Release of WaterFOG (two systems going into operation in this picture) . . .



3. floods the area with an ocean of tiny water particles which rapidly absorb the heat of the flames, controlling and confining the fire and cooling the metal structures to prevent distortion or destruction, by heat.

Rockwood WaterFOG

strips flammable vapors of their threat

At one of the country's largest synthetic rubber plants, five WaterFOG systems — part of a completely engineered Rockwood fire protection system — stand watch over 34 huge processing and storage tanks. The tanks they guard, measuring 18½ feet high by 8 to 10½ feet in diameter, contain butadiene and styrene . . . extremely vulnerable in case of fire.

The WaterFOG systems may be operated simultaneously, separately, or in any combination. A WaterFOG curtain between every other row of tanks, goes into action whenever the system on either side starts operating. Thus protection is provided over, around and under every tank.

WaterFOG — created by impinging streams of water from Rockwood nozzles — is effective on flammable liquid or vapor fires where spray and solid streams are frequently unsafe. It absorbs heat faster, retards vaporization, doesn't splash. Both Underwriters' Laboratories and Associated Factory Mutuals approve Rockwood WaterFOG installations of fixed piping. WaterFOG nozzles for hose lines also available. Write for Bulletin 123.

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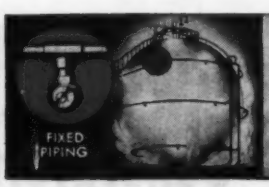
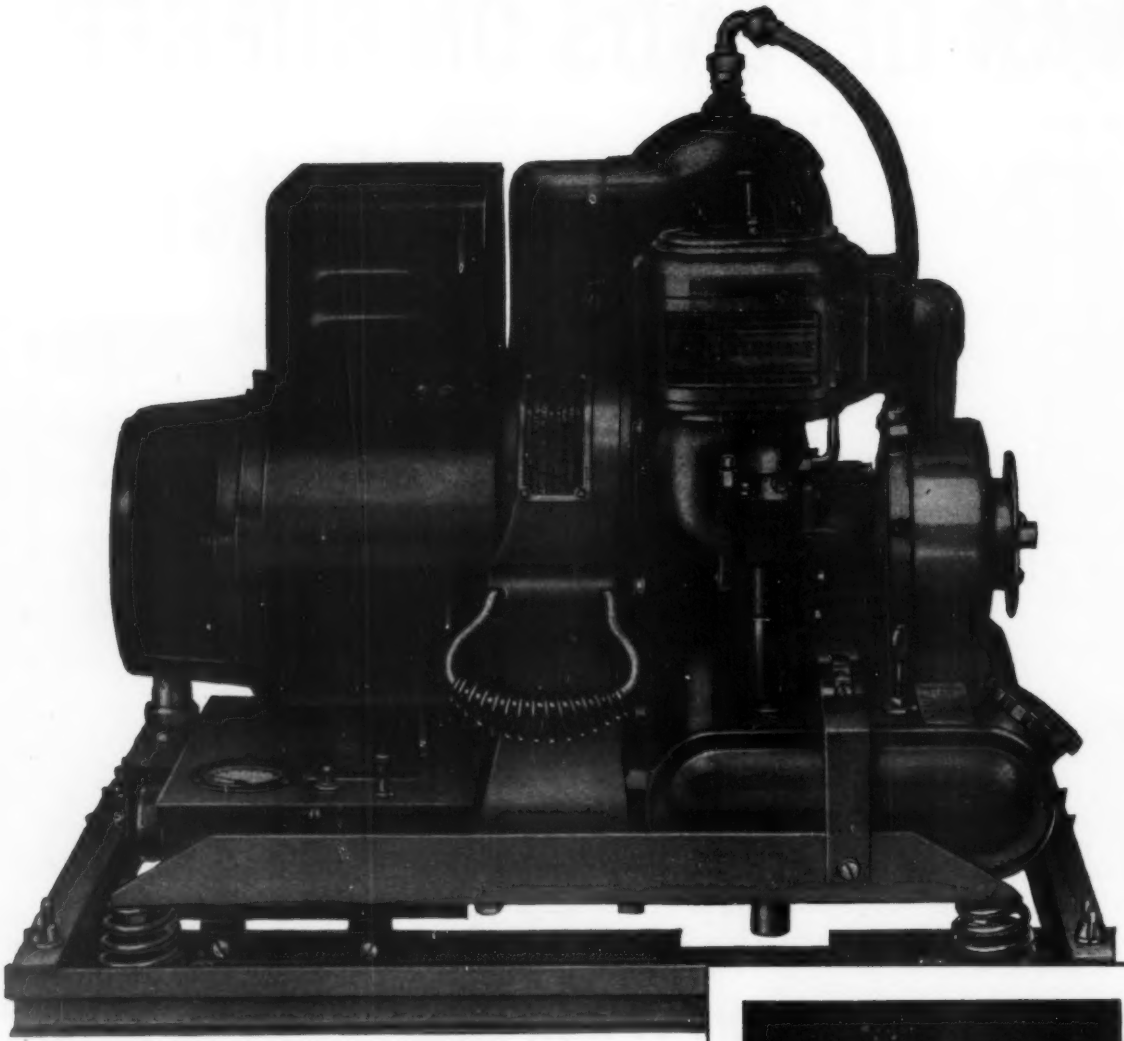
54 Harlow Street, Worcester 5, Mass.
Specialists in Fire Protection Engineering, Equipment and Installation since 1907

TYPICAL WaterFOG APPLICATIONS	
quench and dip tanks	oil switches
paint shops	dryers
transformers	oil storage
	etc.

Water Engineered by Rockwood
Cools, Confines, Smothers Oil Fires

ROCKWOOD WaterFOG





It has to work alone and like it

No and's, if's or but's about it, a Homelite Portable Generator, installed in a plane or a tank is in no position to receive nurse-maid attention. It's usually crammed into some hot, tight corner where it is practically impossible to service it.

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PORT CHESTER, NEW YORK

FOR YOUR PEACE-TIME JOBS

The new Homelite Portable Generators that you will use after the war for operating brilliant floodlights or electric tools will work better in winter and summer. They will be more dependable even under the toughest operating conditions. They will work longer hours without attention or service . . . and will be more rugged and powerful than ever before.

Portable Pumps - Generators - Blowers

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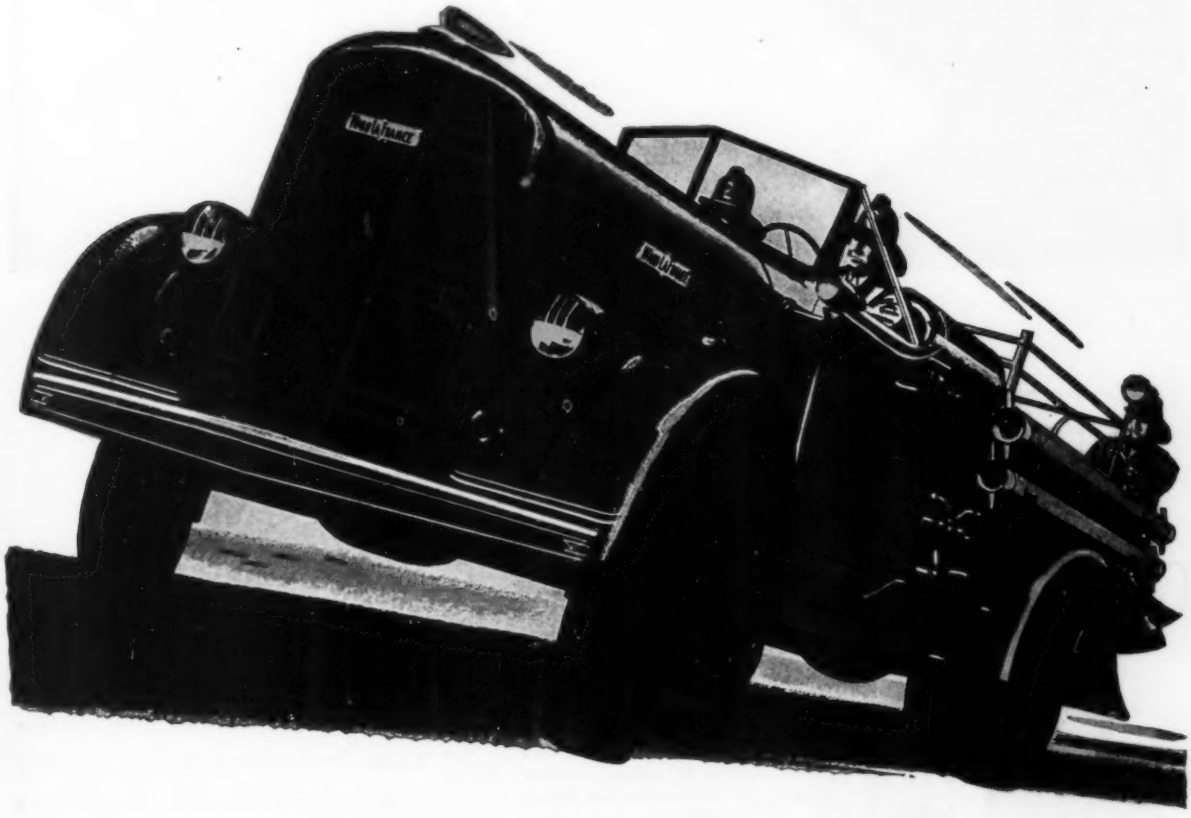
PREDETERMINED PERFORMANCE



The first five minutes at a blaze are worth the next five hours! Lack of prompt action is responsible for the fact that a mere 1% of all fires accounts for 65% of our national fire loss. Reliable engine performance is necessary if fires are to be reached quickly. That is why all Ward LaFrance fire apparatus is equipped with an engine specially built for prompt fire-fighting service. These Ward LaFrance engines can be depended upon to furnish the required horsepower, because apparatus capacities, as well as pump performance, are accurately predetermined. Our engineers will be glad to work on your particular problems and offer sound recommendations that you can depend upon . . . Why not investigate the advantages of predetermined performance by writing today?

WARD LaFRANCE

TRUCK DIVISION

GREAT AMERICAN INDUSTRIES, INC.

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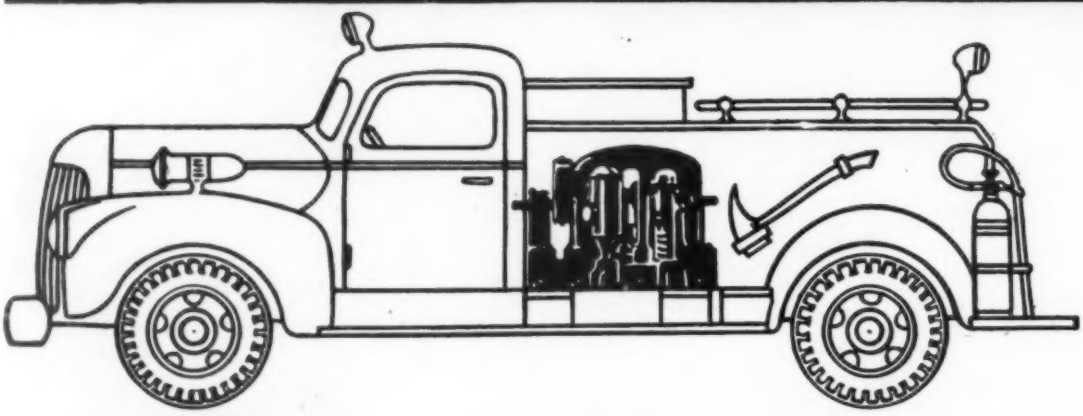
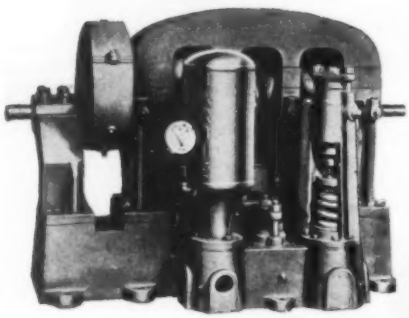
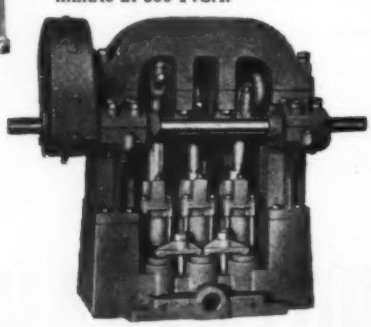




● The Hardie is a big, strong vertical crankshaft-driven pump built for sustained high pressure under all conditions of use. At left, the Hardie Imperial LCXA delivering 60 gallons per minute at 800 P.S.I. Below the Hardie Imperial XCXX 35 gallons per minute at 800 P.S.I.



Specify

● The high pressure pump is the most important thing in any fog fire fighter. Hardie pumps are available in the complete fire trucks built by leading manufacturers of fire control equipment. Specify a Hardie pump and Hardie fog gun when you buy a complete new fog fire fighter, or convert an old truck into a fog unit, easily done at small cost.

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Hudson, Mich., Los Angeles, Calif., Portland, Oregon
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High Pressure PUMPS AND FOG GUNS for Fog Fire Fighters

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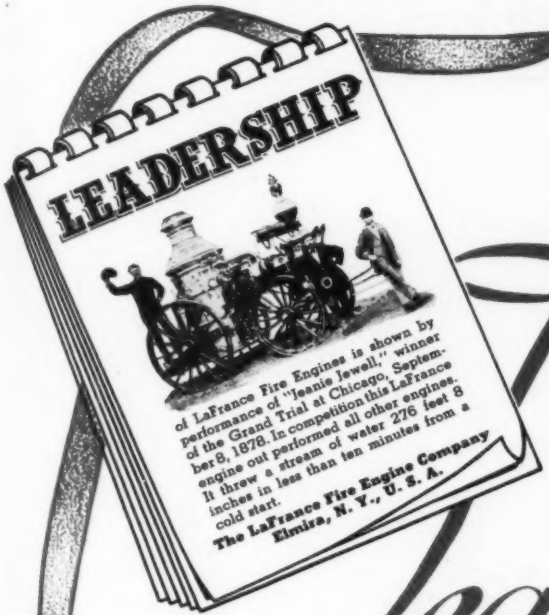
LEADERSHIP
of LaFrance Fire Engines is shown by performance of "Jeanie Jewell," winner of the Grand Trial at Chicago, September 8, 1878. In competition this LaFrance engine out performed all other engines. It threw a stream of water 276 feet 8 inches in less than ten minutes from a cold start.
The LaFrance Fire Engine Company
Elmira, N. Y., U. S. A.

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Leadership

Then—as now—carries a greater responsibility than outstanding performance. American LaFrance leadership, as manufacturing specialists, has been maintained for over a century by constant application to the problems of the fire service. Design changes and new types are contributing to the efficiency of fire departments.

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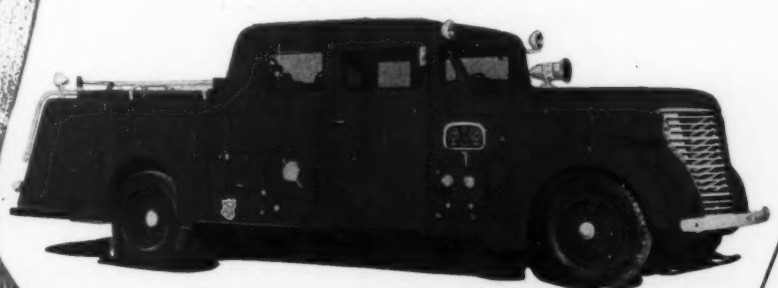
- **Dependable**
- **Surplus power**
- **Modern design**
- **Ample reserve capacity**
- **Quality built**
- **Improved utility**



Recent pumper deliveries:

3. Boston, Mass.
2. Corpus Christi, Tex.
1. Morgantown, W. Va.
1. Alliance, Nebraska
1. Sierra Madre, Calif.
1. Cardenas, Cuba

AMERICAN-LA FRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.
LA FRANCE FIRE ENGINE and FOAMITE LIMITED
TORONTO, 9, ONTARIO, CANADA

NATIONAL FOAM FIRE PROTECTION

Official U. S. Navy Photograph

When Foam Extinguishes Fire There Are No Flashbacks

Foam is the acknowledged medium for extinguishing fires in oil, gasoline and other petroleum products, also other serious industrial fires. It is the only means of providing a tough, lasting blanket which stays on the surface to prevent flashbacks and is not readily *dissipated by wind or draft.*

Our Engineers will be glad to consult with you and recommend the type of Foam and equipment best suited to your needs.

Note: **We are now able to offer a limited amount of Aer-O-Foam for civilian use. For many months the U. S. Navy has required our entire output.**

IN FIRE DEPARTMENT SERVICE

National Foam System has equipment especially designed for use of Fire Departments to meet all types of fire fighting requirements. Complete engineering service available.

BACK THE ATTACK—*BUY WAR BONDS*

Officers and men as well as planes on Aircraft Carriers and other naval craft enjoy the protection provided by National Foam.

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Specializing in Foam Fire Protection

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The Seagrave CANOPY CAB PUMPER

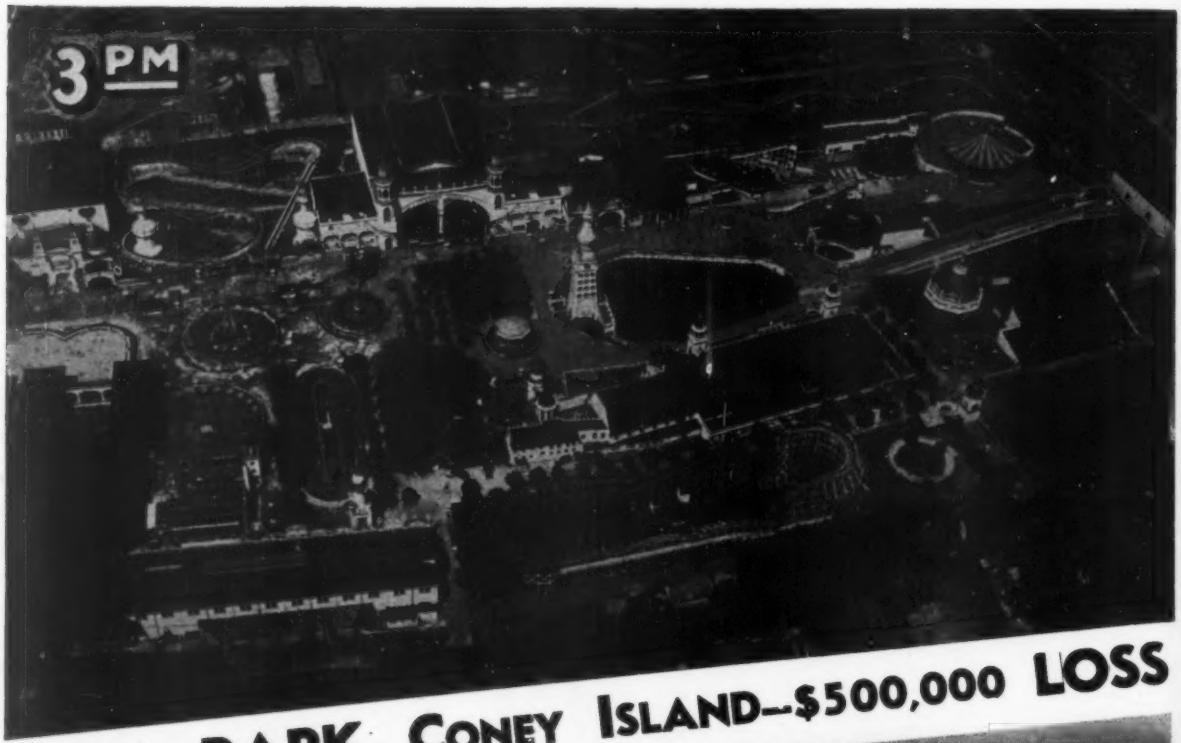
The Canopy Cab was another Seagrave "first" . . . a great forward step in fire apparatus design. The cab itself accommodates officer, driver and one other man. Cushioned canopy seat, located at rear of cab, comfortably holds four crew members. All dependable Seagrave construction. . . . Powered with Seagrave designed and built motors.

THE SEAGRAVE CORPORATION, COLUMBUS, OHIO

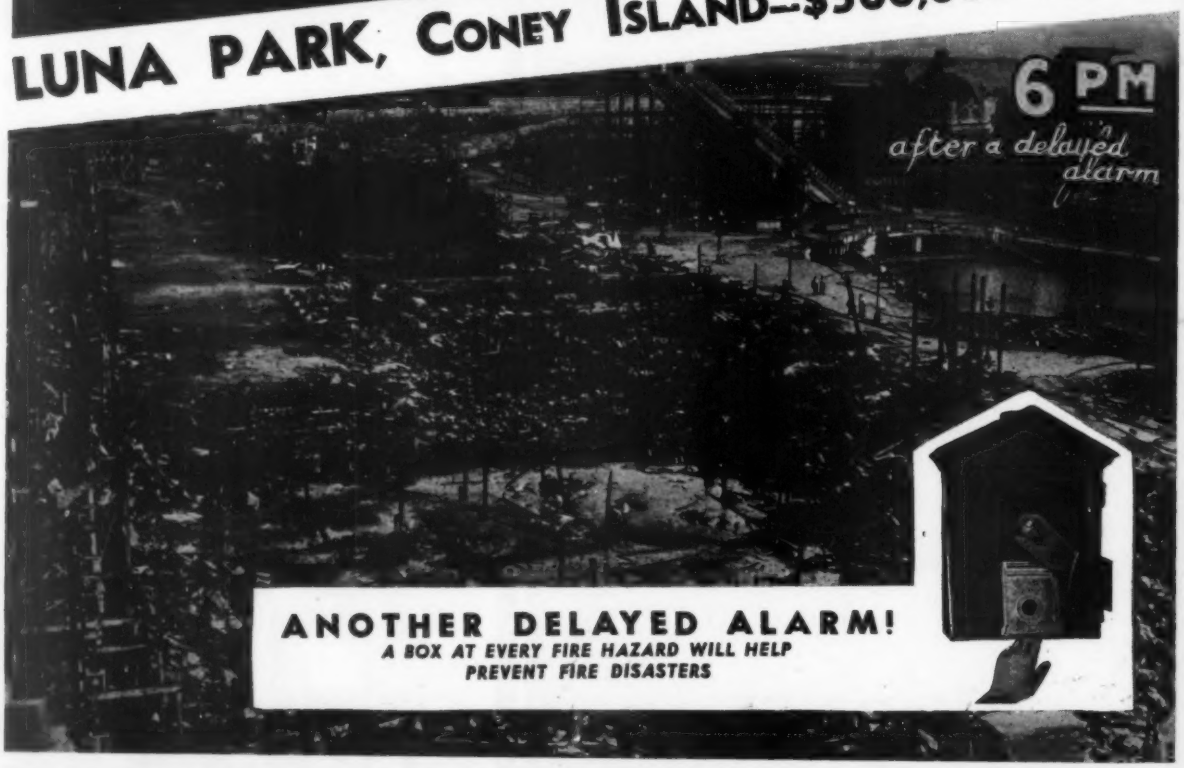
BICKLE-SEAGRAVE, LTD., WOODSTOCK, ONT.

★SEAGRAVE★

THE GREATEST NAME IN FIRE APPARATUS



LUNA PARK, CONEY ISLAND—$500,000 LOSS



THE GAMEWELL COMPANY
Newton Upper Falls, Massachusetts
In Canada: Northern Electric Company Ltd., Montreal

FIRE ENGINEERING

FEBRUARY, 1945 VOL. 98. NO. 2

With the Editor

Know the Law! The death of one auxiliary fireman and serious injuries to two others in one city incurred, it is said, in the performance of their duties, has focussed attention on the importance of adequately "covering" these enrollees by suitable liability compensation or other form of insurance.

In the case of these particular firemen, who were operating in conjunction with regular fire forces in a large metropolitan city, there appears to be no established fund, or basis of compensation to reimburse them, or their families, as is the case with regular uniformed members of the department. It is understood the city in question is paying the hospital bills of the two injured auxiliaries and efforts are being made to enlist public and fire department support for them, and for the family of the dead volunteer. Efforts to bring about some sort of reimbursement under the conditions of the government's special national fund of $5,000,000 set aside by presidential order over a year ago to provide a measure of protection for civilian protection enrollees, including auxiliary firemen, appear to have met with no success.

Here are casualties of the war on the home front: one dead, one doubtless crippled for life, one seriously injured. Can it be said that these men are less deserving of financial support than the soldier who fights the World War II behind a desk in the Pentagon Building? If it is true, as reported, that the disintegration of organized civilian defense forces has thrown out of gear the legal machinery for protecting duly accredited auxiliaries injured in line of duty against financial disaster, it is time the fire service knew all about it. Fire chiefs who may be using auxiliaries or other unofficial volunteers in these days of manpower shortage, will do well to thoroughly review the law, particularly that on liability and compensation.

Diverse Views The headlines of two individual news items received by FIRE ENGINEERING in the same mail tell a terse but interesting story and point a moral. Here they are:

The first is from San Bernardino, Calif., Sun., dated January 10, 1945, and reads: *"Residents Protest Proposed Fire Hall."* The second is from the Knoxville, Tenn. News-Sentinel of January 12, 1945, and reads: *"Haun Fire Fight Rapped as Tardy."*

In San Bernardino, despite the statement of Fire Chief C. N. Niday that the fire station in that particular part of the community is necessary for the protection of life and property, residents of the Waterman District, where it is proposed to erect a $35,000 fire house, appeared before the city planning commission to protest the location of the station in an area "zoned for residential purposes only."

In Knoxville, according to the news story, neighbors of Floyd E. Haun, whose home was destroyed by fire, declared that firemen were tardy in getting to work.

There you have it! Perhaps the fifty San Bernardians who signed the petition opposing erection of a fire station in their "residential area" should be introduced to Mr. Haun who found the fire house and facilities too far away!

Fred Sheppard

Coast Guard Conducts Tests on Ship Engine Room Fires

Interesting Procedures Developed in Extinguishing Fuel Oil Fires with Fog in Engine Rooms in Ships

To fully understand and evaluate water as a fire extinguishing agent, it is necessary to recall to mind the following characteristics and data.

Water is the most efficient heat absorbent substance which can be economically employed for the purpose of controlling and extinguishing fire. It is a liquid at temperatures ranging from 32°F. to 212°F. with a freezing point of 32°F. and a boiling point of 212°F.

A British thermal unit (B.t.u.) is that volume of heat which is required to raise one pound of water through one degree Fahrenheit. Approximately 143 B.t.u's. are required to convert one pound of ice into water. 180 B.t.u's. are required to raise one pound of water from its freezing point (32°F.) to its boiling point (212°F.). Approximately 970 B.t.u's. are required to convert one pound of water from a liquid at its boiling point (212°F.) into steam.

One gallon of water will absorb approximately 1350 B.t.u.'s. if raised from 50°F. to 212°F. This same gallon of water will absorb approximately 8,080 more B.t.u's. if it is converted into steam. Herein lies the secret of the successful employment of water as a fire extinguishing agent. That part of the water which is not converted into steam when introduced into the zone of combustion has not been fully utilized. That part which is converted into steam has not only absorbed heat to its capacity but within a confined space contributes to extinguishment through the process of oxygen dilution. One cubic foot of water if converted into steam will produce seventeen hundred cubic feet of steam.

One 2½ inch low velocity fog head used in these demonstrations delivers approximately 114 gallons of water per minute. This is equal to approximately 15 cubic feet of water. If full steam conversion is obtained, approximately 25,000 cubic feet of steam will be produced in one minute. This 114 gallons of water will absorb approximately 1,000,000 B.t.u's. or the number of B.t.u's. which are generated by the burning of approximately seven gallons of bunker oil if complete combustion is attained.

Official U. S. Coast Guard Photo

Commander Lloyd Layman, U.S.C.G.R., Under Whose Supervision These Fire Fighting Tests Were Made

In these demonstrations the primary extinguishing action is that of heat absorption. The secondary extinguishing action is that of oxygen dilution within the machinery space. It is believed that the uniform cooling of the heated steel effected within the space is due to the water, in the form of mist, being carried throughout the space by convectional currents which are developed as the cooling progresses.

During the period from Aug. 31 to Dec. 21 of last year, an interesting and far reaching series of experimental fires were conducted at the Fort McHenry Training Station, Baltimore, Maryland. An unseaworthy Liberty Ship the "Gaspar de Portola" has served as the test laboratory. This vessel was obtained from the War Shipping Administration by Vice Admiral Waesche, Commandant of the Coast Guard. It was berthed at Fort McHenry last July. Commander Layman was authorized to conduct experimental fires within the machinery space to determine the most practical and effective methods of controlling and extinguishing fires of this type, also to make a study of temperatures which are developed within the machinery space and the period of time required to produce critical temperatures in adjoining holds and compartments.

The "Gaspar de Portola" is a standard cargo ship, 441 feet in length with a beam of 57 feet. The machinery space is a combined engine and fire room. It contains the steam generating plant and the propulsion and pumping machinery. This space occupies the entire midship section of the ship.

It is approximately 50 feet in length and 56 feet wide at the bottom (the floor plate level). The superstructure of the ship forms the upper section of this space. The depth from the main deck is approximately 32 feet.

Under the floor plate level is a space from two to three feet in depth. This space is known as the bilge. Into this space will flow any liquid which is released within the machinery space. The bilge will contain about 30,000 gallons of liquid if the ship is on an even keel without raising the liquid above the floor plates. If there is a release of oil within

Salvaged Liberty Ship "Gaspar de Portola" on Which Fire Extinguishing Tests Were Held

the machinery space it will flow into the bilge and will extend over a surface area of approximately 1,800 square feet.

A part of this surface is in open spaces around the machinery foundations, valves, and manifolds. The remainder is under the steel floor plates. About one-third of the oil surface will be in the open spaces and two-thirds concealed beneath the floor plates.

There are many pipes and other obstructions located within the bilge which prevent complete coverage of the oil surface by applying foam at any one point.

Located in each corner of the forward section is a fuel oil settling tank. Each of these containers has a capacity of 14,083 gallons. Two boiler foundations are located between the settling tanks. The boilers have been removed, and the boiler foundation spaces have been made liquid tight. These spaces were used as oil burning tanks during the preliminary test fires.

Preparations for Tests

On completion of the preliminary tests, these spaces were covered with steel plates. The opening in the smoke stack has been closed in order to simulate conditions which would exist if the boilers were in place. The main entrance to the machinery space is by a door from the main deck, aft passage. A series of sloping steel ladders and platforms extend from this opening to the floor plate level. Located at various levels within the machinery space are pipes, gratings, and other obstructions. At the second deck level, on the port side in the aft corner is located a small storeroom, known as the Engineer's Storeroom, and directly below on the next level is another small storeroom. The side of these storerooms next to the machinery space is open and is covered with heavy wire. Some Class "A" materials will be stored in these spaces. On the starboard side about 8 feet above the floor plate level and extending along the aft bulkhead is a platform on which is mounted the electrical equipment. The floor of the machinery space is approximately 12 feet beneath the water level.

Adjoining the machinery space, fore and aft, are cargo spaces. These spaces are separated from the machinery space by water-tight, steel bulkheads. A major fire within the machinery space if not controlled promptly may cause sufficient heat to be transmitted throught uninsulated sections of these bulkheads to involve cargo or other combustible materials in the cargo spaces.

We have found that in order to extinguish a major oil fire within the machinery space, it is necessary to control the entry of air from the outside atmosphere. To this end, consideration must be given to the air intake openings. There are four doors into the machinery space; one from the boat deck, two from the main deck, and one from the shaft tunnel. There are six main ventilators. These are circular metal tubes which extend from above the superstructure to within 8 to 12 feet of the floor plates. Two are located near the forward bulkhead, two midship, and two near the aft bulkhead. They are evenly spaced in order to allow cool air from the outside atmosphere to be uniformly distributed at the floor plate level. There is an opening 3½ x 3 feet in size from the second deck passage, port side, to the Engineer's Storeroom. It is covered by a heavy wire grill. This is a major air intake during a fire in the machinery space. The skylight openings and the two ventilators located on top of the skylight house complete what may be termed the true air intake openings. The only other opening into the space is the space between the smoke stack and the stack casing. This space provides an insulation for the smoke stack and an exhaust opening through which heated air can escape from the machinery space.

Commander Lloyd Layman, in charge of fire protection training for the U. S. Coast Guard, conducted a series of eleven tests in fire extinguishment aboard a salvaged Liberty ship at Fort McHenry, Maryland. These tests were run during the period of August 31 to December 21 last year.

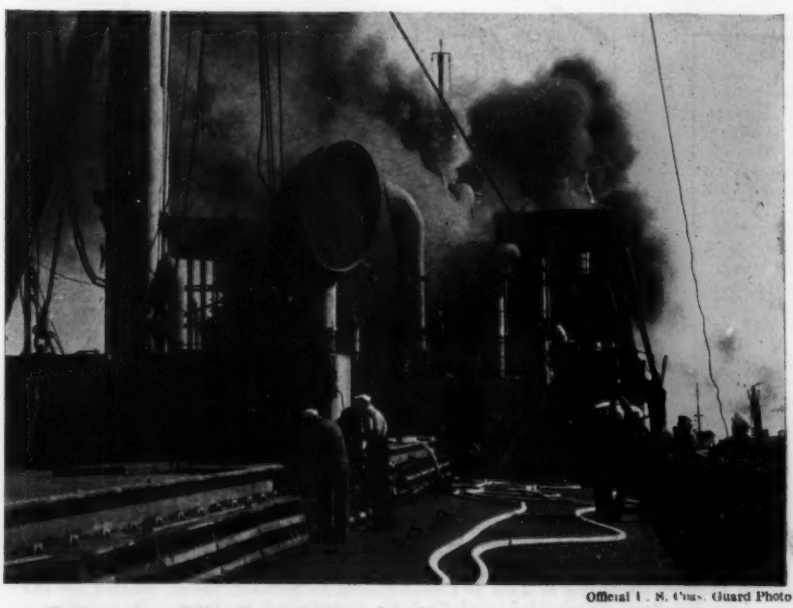
Commander Layman has made available to FIRE ENGINEERING reports of the entire series, together with other data, including a large number of photographs. From this most unusual collection of information an article has been prepared for publication in this journal. The first installment appears herewith; the second will be published in the March issue.

The article deserves careful study because of the bearing the techniques of fire fighting developed by these tests may have on municipal fire suppression strategy.

Combustible materials within the machinery space are bunker, lubricating, and cylinder oils and a limited quantity of Class "A" materials. A release of bunker oil is the major fire hazard. A broken pipe or a punctured settling tank may release considerable volume of bunker oil. There are three grades of bunker oils used as fuel in commercial, steam-driven, cargo ships. They are bunker oil "A", "B", and "C". Bunker "C" is the most commonly used. It is a very heavy oil which must be preheated before it can be used as boiler fuel. Bunker "A" is a lighter oil which has a much lower pour point and is usually used by ships operating in very cold climates. Navy Special fuel oil is used by the steam driven ship of the Navy and Coast Guard. Its specifications are very simular to those for bunker "A". It has a slightly lower pour point. In the test fires, we have used either bunker "A" or a mixture of bunker "A" and Navy Special. Bunker "A" and Navy Special are more difficult to extinguish than either bunker "B" or "C". By using bunker "A" and replacing the oil consumed in each test fire with Navy Special, it has been possible to keep the test oil very close to the specifications of bunker "A". In the preliminary test fires, from 1,000 to 2,000 gallons of bunker "A" oil were placed in the boiler foundation spaces. For Test Fire No. 5—5,000 gallons of bunker "A" oil were released in the bilge. This provided an oil depth of approximately 4½ inches extending over about 1,800 square feet. After each test fire, the oil depth is measured and an estimate is made of the number of gallons consumed. Before the next test, the estimated number of gallons consumed in the previous fire is replaced with Navy Special fuel oil. The usual amount is 1,000 gallons.

Thermocouples Record Temperatures

An electronic pyrometer together with



Official U. S. Coast Guard Photo

Superstructure of Ship During Fire Extinguishing Tests. Note Layout of Hose Lines

eleven thermocouples were installed previous to Test Fire No. 5. The thermocouple terminals are located at various points throughout the machinery space. It is possible to determine the degree of temperature at points three feet above the floor plates and at all overheads within the space. By pressing a station control button on the pyrometer, the temperature at any one of the eleven locations is shown on the dial. Temperature reading at all locations are recorded each minute during test fires.

Carbon Dioxide System Provided

This ship is provided with a carbon dioxide system for the machinery space. The system has 29-50 pound carbon dioxide cylinders, a total of 1,450 pounds of gas. The gas outlets are located at various points under the floor plates. The entire volume of gas is discharged into the machinery space in a period of two to three minutes after the release control is pulled. The carbon dioxide system has been used in several test fires.

The success or failure of the carbon dioxide system in extinguishing a major oil fire within the space will depend upon a number of factors. The major factor is the period of time the fire has burned before the carbon dioxide is discharged into the space. It would be very difficult if not impossible to determine the exact number of minutes after ignition of a fire that this system would be effective. Other than the closing of the doors, there is no mechanical means of restricting the flow of air into the space from the outside atmosphere. For the carbon dioxide system to be effective, it is suggested that the crew evacuated the machinery space promptly, close all doors, and release the system without any unnecessary delay. In a ship with the boilers in operation, the effective period may not exceed ten minutes.

Eleven experimental fires were conducted within the machinery space. The first four were preliminary in which the boiler foundation spaces were used as burning tanks. From these preliminary fires, it was able to determine the air intake openings and the means of closing these openings. The burning surface in the preliminary test fires did not exceed 346 square feet. With the oil released in the bilge, the burning surface was increased to approximately 1,800 square feet. In the preliminary test fires, the boiler foundation spaces formed tank like containers. The air had to enter from the sides and free burning did not extend to the center part of the surface. A considerable volume of smoke was given off during these fires. With the oil located in the bilge, air is distributed over the entire surface and the burning at all points appears to be fairly uniform after the fire has burned from fifteen to twenty minutes. As the degree of temperatures increases within the space, there is an increase in the volume of air drawn into the space through the air intake openings. The smoke decreases in volume and changes in color from black to brown and gray.

Test No. 1

I. Time—

Afternoon of 31 August, 1944.

II. Purposes—

1. Primary purpose to determine under fire conditions: (1) the openings through which air can enter the engineroom; (2) the relative volume and direction of air flow; (3) if extinguishment could be accomplished solely by closing of air intake openings.

2. Secondary purpose: (1) to determine the probability of a smoke explosion; (2) the practicability of using the shaft tunnel and opening in the bulkhead between the shaft tunnel and the engineroom as an avenue of attack.

III. Conditions Before Test—

1. No changes were made in the engineroom space which would favor a fire-fighting party; with the following exceptions this space was kept in its normal condition.

a. Both boilers have been removed and the smoke stack closed with steel plate. The space between the stack and stack casing left unchanged.
b. The boiler foundation spaces were made liquid tight and covered with removable plates to make these spaces available as containers for the fuel oil used during tests.

2. Two 3 inch hose lines were laid from a 500 gallon skid-pump unit, located on the adjacent pier, to the main deck. Two 1½ inch lines with all-purpose nozzles were placed down the forward escape hatch to the shaft tunnel and a number of stand-by lines located at various strategic points on the main deck.

3. One thousand gallons of Bunker "A" fuel oil was placed in the port boiler foundation space and the cover plates removed from the starboard half of this space leaving an opening of approximately 86 sq. ft. uncovered during the test.

IV. Test Record—

1. Using about one gallon of gasoline to prime the oil, the fire was started at 1517 o'clock after which the fire party remained in the engineroom without physical discomfort for approximately five minutes before the smoke banked down to near the floor plate level. Very little radiant heat was given off by the fire.

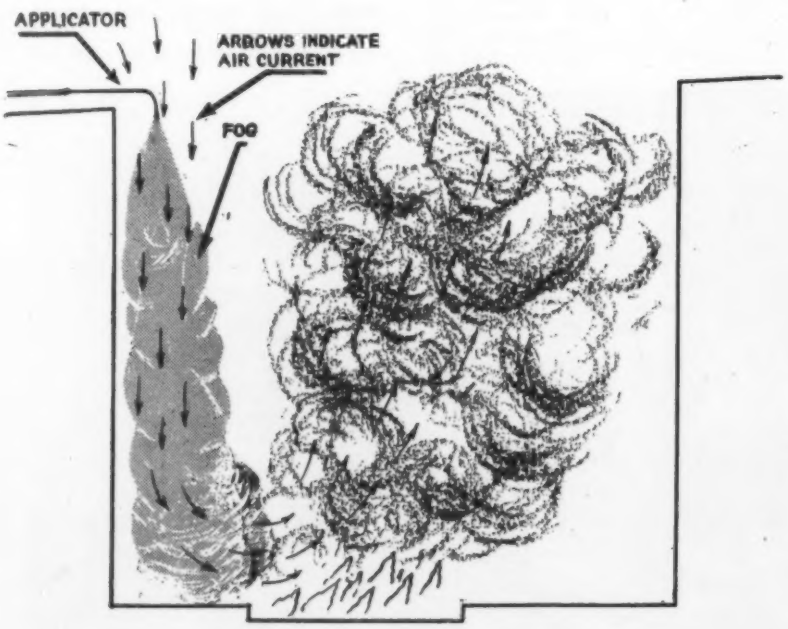
2. From topside it was noted that almost immediately after ignition, black smoke started to come from the space between the stack and stack casing and from the forward port ventilator. The flow of air was downward in all main ventilators with this one exception.

3. After the fire had continued for fifteen minutes canvas covers were placed on all main ventilators except the forward port. Smoke ceased to come from this ventilator and the flow of air changed to downward. This ventilator was then covered and within a few minutes the smoke emitting from the stack casing decreased in volume and density.

4. Covers were placed on the two small ventilators located over the skylight when an indraft of air was noted. The skylight openings remained closed during the test. Twenty minutes after ignition of the oil all ventilators had been closed.

5. Up to this time considerable air had been entering the engineroom through the grilled opening between the Engineer's Storeroom and the second deck passage on the port side. The indraft of air increased considerably when all topside ventilators were covered. This opening was covered thirty minutes after the oil was ignited (1547) and within a few minutes the smoke coming from the stack casing decreased in volume and changed from black to gray.

6. Forty-five minutes after the oil was ignited only a small amount of light gray smoke was being emitted from the stack casing.



How Air Currents Carry Fog to Zone of Combustion in an Enclosed Space. Heated Air and Gases from Fire Rose, Causing Inflow of Cool Air as Indicated by Arrows. These Inflowing Air Currents Carry Finely Divided Water Spray or Fog from Applicator or Fog Nozzle to the Fire

7. Fifty-five minutes after the oil was ignited the two aft main ventilators and the two small ventilators located over the skylight were uncovered to prelude any possibility of a smoke explosion occurring when the fire-fighting party entered the engineroom. After these ventilators were uncovered the smoke coming from the stack casing changed to black in color and increased greatly in volume.

8. One hour after the oil was ignited a two man fire-fighting party entered the engineroom through the opening from the shaft tunnel. Although the fire was located in the most inaccessible position from the point of entry and considerable smoke and heat were present, the fire-fighting party was able to advance within striking distance of the fire by keeping close to the floor plates. No respiratory protection was used by members of this party.

9. The burning oil was completely extinguished and the heated steel in the immediate vicinity was cooled by the use of high velocity fog from a single 1½ inch all-purpose nozzle. It was necessary to use the solid stream from the all-purpose nozzle to reach the burning insulation on the degaussing cable located in the overhead on the port side. It took approximately five minutes to completely extinguish all fire and to cool the heated steel to prevent reignition of the oil. The amount of water used was approximately 200 gallons.

V. Condition After Test—

1. Damage from the fire within the engineroom was surprisingly small as will be noted in the following observations:

a. There was considerable warping of the sides of the fuel oil container. Angle iron cover plate supports were warped and some broken in the uncovered section. The section of cover plates next to the open space was warped.

b. Paint did not flash. The paint blistered and charred on all horizontal and vertical surfaces where heated smoke collected or moved upward in the overhead. No blistering or charring of paint was noted on surfaces up to twelve feet above the floor plates except on the two forward main ventilators.

c. Practically all surfaces at upper levels were coated with carbon.

d. Grease on the machinery did not melt, flow, or ignite.

e. The only apparent burning of material other than the fuel oil was the insulation on a short section of the degaussing cable located in the overhead on the port side.

f. The paint on the upper half of the aft bulkhead on the port side of No. 3 hold was discolored and blistered. This surface gave off some smoke during the fire.

g. Combustible materials located in the second deck section, directly over the engineroom, showed no indications of charring and none were ignited. The deck of the port side passage, second deck, did develop a slight warp.

2. By measuring the level of the oil before ignition and after the removal of water following the test it was estimated that approximately 225 gallons of oil had been consumed.

VI. Tentative Conclusions—

1. Fires occurring within the engine-rooms of steam driven ships may appear to be more hazardous, to individuals not familiar with the fundamentals involved, than the facts justify. The basis of this misconception is the large volume of black smoke emitted from the engine-room. When bunker oils burn they produce a considerable volume of black smoke. The volume of smoke is greatly increased when the flow of air into the zone of combustion is restricted.

2. The shaft tunnel and the opening in the bulkhead between the shaft tunnel and the engineroom provide an effective avenue of attack on the level of the fire. When the door to the engineroom is opened there is a strong indraft of air which drives all flame and smoke from the shaft recess toward the interior of the engineroom.

3. Trained fire-fighting personnel thoroughly acquainted with this type of ship can enter the engineroom by way of the shaft tunnel and extinguish a major fire. If the fire is attacked promptly extinguishment can be effected with a small volume of water and with little damage to the ship. During the early stage of a fire, the fire-fighting personnel could advance to any position within the engineroom without being seriously handicapped by either smoke or heat.

4. The possibility of a smoke explosion occurring within an engineroom, upon admission of air, after all air intakes have been closed for a period of time, is believed to be eliminated by the presence of the opening between the smoke stack and the stack casing. This opening is located at the highest level within the space and provides a natural outlet for the continuous escape of a major part of the heated smoke.

* * *

Test No. 2

I. Time—

27 September, 1944.

II. Purposes—

1. The primary purpose: to determine the effectiveness of the carbon dioxide extinguishing system under the following conditions:

a. With the ventilators and other air intake openings uncovered.

b. Failure to release the carbon dioxide promptly after a major fire had developed within the engineroom. The delay interval to be twenty minutes.

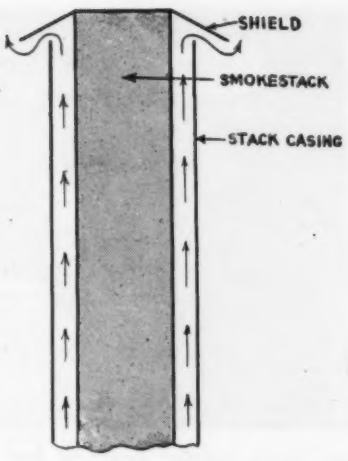
2. Secondary purpose: to determine the advisability of applying water fog from the door openings on the main deck to reduce the temperature within the engineroom previous to the entry of the fire-fighting party from the shaft tunnel.

III. Conditions Before Test—

1. The engineroom remained the same as reported after the initial fire test of 31 August, 1944 with the following exceptions:

a. Both boiler foundation spaces were used as fuel oil containers and all but two rows of cover plates were removed, leaving approximately 109 sq. ft. of each tank uncovered during the test. The total burning surface was 346 sq. ft.

b. Approximately 900 gallons of bunker "A" fuel oil was placed in each container.



Cross-Section of Smokestack Showing Space Through Which Smoke Rose from Burning Oil in Engine Room. Arrows Indicate Course of Smoke

2. Two 3 inch hose lines were laid from a 500 gallon skid-pump unit, located on the pier, to the main deck to supply the 1½ inch hose lines. Two 1½ inch lines with all-purpose nozzles were placed down the forward escape hatch to the shaft tunnel. Two 1½ inch lines were laid to the starboard passage door of the engineroom on the main deck. One 1½ inch line was laid to the main engineroom entrance.

IV. Test Record—

1. Using gasoline to prime the oil, fire was started at 1117 after which the fire party remained in the engineroom without physical discomfort for about six minutes before the smoke banked down to near the floor plate level.

2. From the topside, it was noted that almost immediately after ignition, black smoke started to come from the space between the stack and the stack casing, the open skylights, the two small ventilators located over the skylight, and from the forward starboard ventilator. The flow of air was downward in all main ventilators with this one exception.

3. Twenty-one minutes after the oil was ignited the carbon dioxide system was discharged into the engineroom. Within one minute the smoke emitting decreased in volume and changed to gray in color. Three minutes after the system was discharged the smoke was increasing and changing to black in color. Four minutes after discharging the system the volume, density, and color of smoke was the same as before the carbon dioxide was released.

4. Thirty minutes after the start of test, water fog was applied from two 1½ inch all-purpose nozzles from the door opening at the forward end of the starboard passage on the main deck and from one 1½ inch all-purpose nozzle at the main engineroom entrance. Within one minute the smoke started to decrease in volume and change to gray in color. Water fog was applied for ten minutes at these locations during which time there was a constant diminishing of the quantity and density of smoke with steam being apparent at the end of this period.

Official U. S. Coast Guard Photo

Air Velocity Indicator Determines Rate of Air Inflow

5. Forty minutes after start of test two fire-fighting parties, each consisting of two men, entered the engineroom from the shaft tunnel and applied high velocity water fog from two 1½ inch nozzles. Six minutes after these parties entered the engineroom the fire was completely extinguished.

6. It was necessary to discontinue the use of water fog from the door openings on the main deck after the fire-fighting party entered the engineroom. Application of water fog from the door opening near the forward end of the starboard passage had a tendency to restrict the flow of smoke and steam from the engineroom by way of the opening between the stack and stack casing. The application of water fog from the main engineroom entrance allowed heated water, almost at the boiling point, to fall on the members of the fire-fighting party.

7. The fire-fighting party operated without respiratory protection. Tests made with a flame safety lamp indicated no deficiency of oxygen when the fire-fighting party entered the engineroom.

8. Approximately 1,600 gallons of water was applied from the door openings on the main deck. Approximately 300 gallons of water was used by the fire-fighting party to extinguish the fire.

V. Conditions After Test—

1. The engineroom was in practically the same condition as reported after test fire No. 1 (31 August, 1944), with the following changes:

a. The paint at all levels was blistered and, at some locations, completely removed.
b. The paint on the upper half of the aft bulkhead in No. 3 hold was discolored and blistered. There was considerable warping of the plates of this bulkhead.
c. Grease on machinery flowed but did not ignite.
d. Solder on joints of wire at electrical equipment platform level was melted.
e. No burning of Class A material was apparent.
f. There was considerable discoloration and peeling off of paint on the exterior of the stack casing on the topside.

2. By measuring the level of the oil before ignition and after removal of water following the test it was estimated that approximately 350 gallons of oil had been consumed.

VI. Tentative Conclusions—

1. The delay of twenty-one minutes is a sufficient period of time to heat the steel in the vicinity of the burning oil to a temperature greater than the ignition temperature of the oil. This factor permits reignition of the oil.

2. To maintain an oxygen dilution within an engineroom, under similar conditions, it is necessary to restrict the flow of air from the outside atmosphere.

Remarks—The carbon dioxide system provides a total of 1,450 pounds of gas. When a volume of carbon dioxide gas is released into a heated space an expansion of the gas takes place due to its rise in temperature. Its specific gravity is reduced in ratio to that of the cool air entering from the outside atmosphere. Due to this factor a part of the carbon dioxide gas escapes with the out-flow of heated smoke. If the flow of air from the outside atmosphere is not restricted, under these conditions, the dilution of carbon dioxide gas will be sufficient to allow reignition.

3. The application of water fog from the openings on the main deck reduced the temperature within the engineroom. The fire-fighting party was able to operate with less physical discomfort than in test fire No. 1.

4. The application of water fog from the opening on the main deck should be discontinued when the fire-fighting party enters the engineroom from the shaft tunnel.

Test No. 3

I Time—

On October 9, 1944 two additional test fires were conducted.

II Purposes—

1. Purpose of Test Fire No. 3: To determine the effectiveness of the carbon dioxide extinguishing system under the following conditions:

a. With the ventilators and other air intake openings uncovered.
b. With prompt release of the carbon dioxide after a major fire had developed within the engineroom. The time interval between start of fire and release of carbon dioxide to be ten minutes.

2. Purpose of Test Fire No. 4 (which was started one hour after Test Fire No. 3): To determine if prompt extinguishment and cooling of the heated metal to below the ignition temperature of the oil could be effected by closing the air intake openings and applying water fog through door operings on the main deck.

III Conditions Before Test—

1. The engineroom remained the same as reported after Test Fire No. 2 (27 September, 1944) with the following exceptions.

a. Approximately 700 gallons of bunker "A" fuel oil was located in each boiler foundation space with a total burning surface of 346 sq. ft.
b. Two 3 inch hose lines were laid from a 500 gallons skid pump unit located on the pier, to the main deck to supply the 1½ inch hose lines equipped with all-purpose placed down the forward escape nozzles. Two 1½ inch lines were hatch to the shaft tunnel. Two 1½ inch lines were laid to the main engineroom entrance. One 1½ inch line was laid to the starboard passage door of the engineroom on the main deck.

IV Test Record—

1. Using gasoline to prime the oil fire was started at 1405, after which the fire party remained in the engineroom without physical discomfort for about five minutes before the smoke banked down to near the floor plate level.

2. From the topside, it was noted that almost immediately after ignition, black smoke started to come from the stack casing, the open skylights, and forward starboard ventilator. The flow of air was downward in all main ventilators with this one exception.

3. Ten minutes after the oil was ignited the carbon dioxide system was released. Within one minute the smoke emitting decreased in volume and changed to gray in color. During the ten minutes following the release of the carbon dioxide smoke continued to decrease in volume and change to lighter gray in color. Twenty-three minutes after release of the carbon dioxide smoke had ceased to come from the stack casing, the open sklyights, and the ventilators.

Official U. S. Coast Guard Photo

Checking Pyrometer Readings During Tests

4. Forty-five minutes after oil was ignited a fire party entered the engineroom from the shaft tunnel. A lighted flame safety lamp placed on the electrical equipment platform (7 ft. 6 inches above the floor plates) before ignition of oil, was found extinguished. Open flame lowered to the oil level in the boiler foundation space continued to burn. Carbon was found burning in the inside of the port boiler foundation space.

Test No. 4

1. Using gasoline to prime the oil remaining in the boiler foundation spaces after Test Fire No. 3, fire was started at 1505, after which the fire party remained in the engineroom without physical discomfort for about five minutes before the smoke banked down to near the floor plate level.

(*Continued on page* 110)

Nation's Fire Service Experiences Worst Winter in Years

Highlights of Reports of FIRE ENGINEERING's Correspondents Emphasize the Many Difficulties Facing the Fire Forces

NINETEEN forty four went out like a lion, at least so far as the nation's fire losses were concerned, giving the fire fighters more and harder battles than they've been called upon to fight for over a decade—all this with depleated manpower and war-weary fire apparatus.

Losses in property were heavy, particularly in the industrial classifications, but mercantile, commercial, residential and rural losses ran high. So, too, was the loss of life which, despite the fact there was no Cocoanut Grove disaster to swell the total, is said to be close to 11,000 fatalities, with many times that number badly injured. Over the Yule weekend alone more than fifty deaths were reported caused by fire—a large number of them from Christmas tree blazes. Finally, and equally tragic, is the increase in the number of casualties among the fire fighters. No accurate figures are available on this score but deaths and injuries in the fire service in 1944 were high—and 1945 shows no signs of abatement. In New York City alone, in January, the Fire Department suffered the loss of seven regular, and one auxiliary firemen, including a lieutenant and a battalion chief. Losses appear, also, to have been heavy in fire apparatus and equipment.

Still another development of the turn of the year was the number of simultaneous fires, some of them serious—some fatal, which occured in a number of the larger cities.

War-time publishing restrictions do not permit detailed accounts of all these fires. All we can do is to give the highlights of representative cases, reported by our special correspondents. FIRE ENGINEERING, therefore, takes you first to

NEW YORK CITY*

The New Year got off to an unfortunately fatal start in New York. In the first week of 1945 alone, fire took a total of twelve lives in eight fires during cold weather; dozens were burned or injured and hundreds driven into the streets. There were scores of rescues made by firemen.

The year started off with the death on New Year's Day of Lieutenant Joseph A. Joyce of Engine Co. 40, in an old-law tenement in West 63rd Street. He had been promoted that day at 12:01 A.M. to the rank of lieutenant. Before the ink could dry on his certificate, he was dead from smoke narcosis in a flat where a Christmas tree fire burned out three rooms.

Other fatal fires were:

January 2—Man smoking in bed, 977 Fox St., Bronx, one alarm. Woman smoking in bed, 224 West 10th St., Greenwich Village, one alarm.

January 3—Two children, six and two years old and their dog; cause, playing with matches, 415 Wallabout St., Brooklyn, one alarm.

January 5—Three aged women suffocated while asleep in a seven story apartment, Broadway and 96th St., cause not determined, three alarms. Woman smoking in bed, Hotel Shelton, no alarm, died in bathtub trying to assuage her burns. Mother and infant, 340 East 9th St., Brooklyn, Christmas tree, four alarms.

This fatal fire, at 6:55 P.M. Friday, January 5th where a 24-year old mother and her year and a half old baby perished, almost within sight of help, was a tragic illustration of the hazard of the "simultaneous" fire. At 6:53 P.M. there was a first alarm for a fire in a store at 1322 Newkirk Ave. When Box 3707, not far away, at East 9th St. and Cortelyou Rd. was received, there was only one first alarm company available. The nearest ladder truck was special called at once so that both arms of the service would be on the ground. The second alarm at 7:05 had to be filled (because of other fires) by special calls for two pumpers and one ladder truck, otherwise not due until the third alarm.

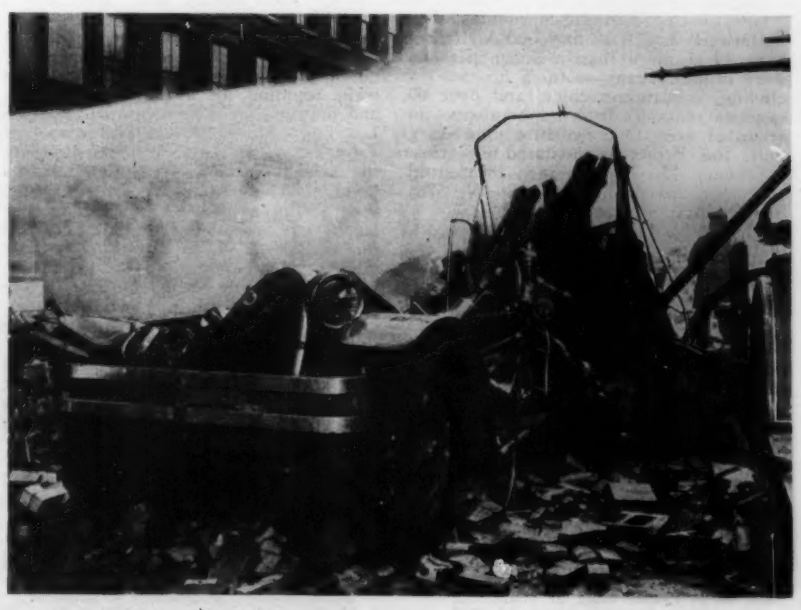
The fire involved several two family houses and when the third alarm struck at 7:18 the dispatcher at once jumped it to a fourth alarm, which brought only one surplus company over the normal third alarm assignment. The woman in whose home this fatal fire started, trapping the young mother and her infant on the second floor front, told Fire Mashal Brophy that her little boy had been playing under the Christmas tree; that there was a flash, that the boy escaped the fast fire, that the tree had been decorated with cotton and that the tree lights cost 79 cents a string, and two strings were purchased two years ago for a total of $1.58.

This fire demonstrated again that it is the second, or simultaneous fire, in any otherwise adequately protected locality that is to be feared.

January 6—Fifty year old woman suffocated on couch; 570 W. 193rd St. In similar fire at 2612 Broadway, man was found overcome in bed but resuscitated by firemen. A pre-dawn 3-alarm fire drove 300 persons from an 80-family apartment at 10 Ocean Parkway, Brooklyn. In the Bronx a patrolman and his wife received second degree burns in attempting to rescue their son. Many others hospitalized—one alarm. A man and his wife were burned at 2235 Creston Ave., Bronx, when her dress caught fire from stove and he beat out flames—one alarm.

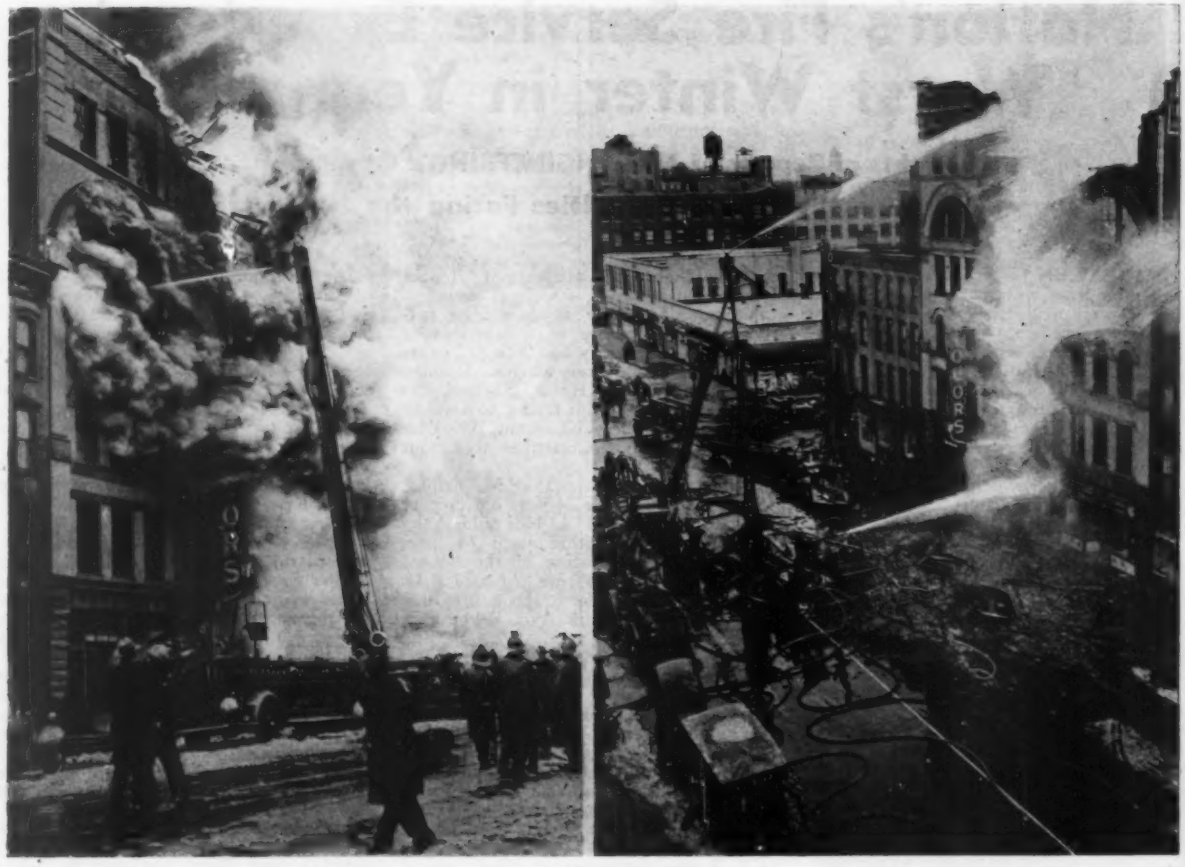
January 7—Nine firemen injured, two seriously in a 3-alarm fire in basement bowling alley, Troy Ave. and St. Johns Place, Brooklyn.

January 11—Elderly woman, partially blind, burned to death at 406 E. 70th St., Manhattan—one alarm.



Two Firemen Working at this Hose Tender Were Killed when the Wall of a Burning Warehouse Crashed down upon them. The Fire that Raged through the Building at 123rd Street and Eighth Avenue New York City, was a Five-Alarmer.

*Jerry Daly and others reporting.



Left: Scene at New York Warehouse Fire as the Wall Collapsed After Explosion Lifted Off the Roof. Two Firemen Were Killed by the Falling Debris. Right: The Same Fire After the Wall Had Fallen, Burying Under It a Hose Tender and an Automobile.

Between 7:30 P.M. and 3:00 A.M. January 10-11 more than a dozen persons were injured, many of them firemen including a Battalion chief; and over 60 families routed from apartments in series of fires. One fire in a nine story unit, the Bronx necessitated 3-alarms.

January 13—Two firemen injured in top floor apartment fire, 439 W. 57th St., Manhattan. One alarm.

January 22—One firemen died, eight, including a Battalion Chief and Lieutenant, were overcome from smoke fighting one alarm fire in Chinatown, Manhattan.

January 24—A Battalion Chief and 22 firemen were overcome by smoke fighting three and one half-hour fire that wrecked a 5-story loft building, 58 W. 28th St.

Department's Most Hectic Afternoon!

High point of the fires of the month were the trio of blazes in Harlem which occured within the space of a few hours on January 9th, giving firemen of upper Manhattan and lower Bronx, and Fire Alarm Telegraph Bureau's Dispatchers, their most hectic time in years.

The most spectacular, and the one in which two firemen were killed, razed a six story storage warehouse at Eighth Ave. and 123rd St., Harlem. An explosion, of undetermined origin, but probably due to accumulated gases, in the upper part of the structure blew out part of the roof and upper front wall, toppling an avalanche of bricks and masonry upon two firemen: Nelson L. Tuite and Elbert Hardman, of Engine Co. 36, as they were directing the stream from a deck-pipe into the building. The blinding smoke prevented their seeing what was coming. The hose truck was completely demolished and the tractor of H & L Co. 40, nearby, which was being used as a tower, was considerably damaged. Completely wrecked, also, was a fire chief's car. Over twenty firemen were injured at this fire, while many had narrow escapes. Among the latter were Assistant Chief of Department in Command, John J. McCarthy and his aide, Fireman James O'Brien, the latter making a deadlong dive under another hose truck in the nick of time.

Four alarms and special calls, sounded for this warehouse fire, brought twenty-one engine and six truck companies, two water towers and numerous auxiliary equipment, while ten engine and six truck companies located.

Here is the chronology of alarms:

11:37 A.M., Class 3-1455-3 (special building box) for Lee Bros. Warehouse at 8th and 123rd.

11:42, Box 1455.

11:47, Last due Eng. Co.—47-special called (during daytime last-due engine company does not respond).

11:58, Second alarm. Chief McCarthy, en route, inquired of dispatcher by radio about a tower. He ordered a special call of Tower No. 4 at 12:10 P.M.

12:11, Ambulance No. 1.

12:12, Third alarm.

12:31, Fourth alarm via Car No. 4 (Chief McCarthy).

12:35, Special call, Tower No. 3.

According to Chief Fire Marshal Thomas P. Brophy, the fire might have started in a vanload of furniture which was brought into the warehouse shortly before Louis Seiden, warehouseman, discovered the blaze on the third floor. Besides stored furniture there were automobiles in dead storage, which fed the flames. The fire rapidly mushroomed throughout the upper part of the structure, the fatal explosion occurring about half an hour after fireman began operations climaxing a series of minor explosions.

Families in nearby dwellings in the thickly populated area were evacuated as the fire mounted and smoke blanketed the neighborhood. Heavy streams were directed into the building from towers and deck pipes. In this connection, it is reported that this marked the first large fire at which the New York Fire Department used a ladder pipe; at present only two of its aerial trucks are so equipped.

The Second Fire

While the four-alarm fire was raging in the warehouse, a third alarm fire was effectively brought under control in a five story upholstered-furniture manufacturing plant of I. Greenspan & Sons, Inc. at 204 East 100th Street. Twenty employees of the factory fled to safety from this fire the origin of which is undetermined at this writing. Three firemen were knocked out by smoke fumes from sisal grass used for padding. This fire was fought under the direction of Chief McCarthy.

The alarms and assignments were as follows:

1:21 P.M., Box 1262, 3rd and 100th.
1:22, 4-1262-11 Calling Chief of the 11th Battalion to fire.
1:25, 5-1262-22 Calling Eng. 22 to fire.
1:26, 5-1262-76 Calling Eng. 76 to fire.
1:26, Second alarm.
1:28, 5-1262-60 Calling Eng. 60.
1:28, 5-1262-37 Calling Eng. 37.

Total—8 engines and 3 trucks responding; 2 engines and no trucks locating.

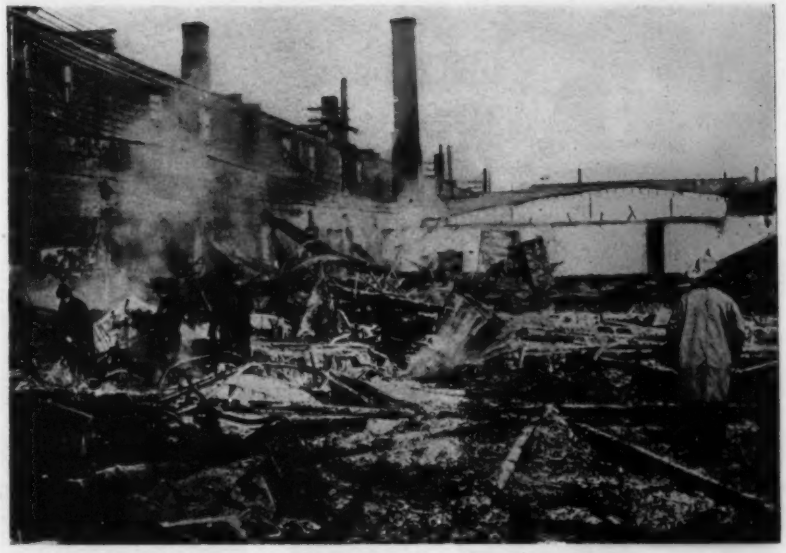
The Third Fire

The third fire was in a five story tenement at 2327 Seventh Avenue, near 136th Street, and was fought under the direction of Assistant Chief John T. Waldron. This fire involved the upper floor and roof section of one tenement and communicated to two adjoining structures before it was controlled. Five firemen were overcome in this operation.

Because apparatus was at a premium, with so many companies at work on the two other fires in the same general neighborhood, Dispatcher Gerald Cruse in charge of the trick at Manhattan Fire Alarm Headquarters, jumped the alarms for this blaze to what may be termed a "synthetic fifth."

The signals transmitted were as follows:

1:31 P.M., Box 1566.
1:32 ½ 4-1566-17 Calling Chief of the 17th Battalion to fire.



Chicago Firemen Search for Live Embers in the Ruins of the Lawrence Bowl, a Bowling Alley, destroyed by Fire which Caused Damage Estimated at $200,000. Only Front and Rear Walls Remained Standing after Blaze Was Brought under Control.

1:40, 5-1566-84 Calling Eng. 84 to fire.
1:41, 5-1566-68 Calling Eng. 68 to fire.
1:43, Second alarm immediately jumped to a Fifth Alarm.

Total—7 Engines and 4 trucks responding; 2 engines and no trucks locating.

CHICAGO HARD HIT

The turn of the year, which ushered in sub-zero temperatures in Chicago, gave the fire department plenty of punishment. On New Year's Day it answered 150 alarms, and before 3 P.M. on the 2nd, 130 alarms had been sounded.

Ten firemen were injured, including a captain, in a fire in a restaurant storeroom at 13551 Brainard. The collapse of a roof caused the injury to nine, including the officer, while the tenth firemen was critically hurt when a ladder slipped.

In another fire, six of eight apartments in a building at 3324 W. 13th St. were gutted. In another rooming house fire at 4530-32 Prairie Ave., fifty persons were driven into the cold.

A peak was reached January 5th with a 5-11 alarm blaze in the Lawrence Bowl, huge bowling establishment at 1820 W. Lawrence St. This drove 300 residents of adjoining structures—including 100 children—into sub-zero weather in their night clothes. About fifty fire companies battled this fire before it was subdued.

In still another fire on that day a woman was burned to death when cleaning tissues, carried in her apron, caught fire from a kitchen range.

Two Persons Died and Fifteen Others Reported Missing in a Fire which Destroyed the Milner Hotel and Three Other Business Buildings in Lima, Ohio, with a Loss Estimated at $500,000.

Fatal Hotel Fire

Called by Marshal Michael J. Corrigan the worst fire in the Loop district in twenty-five years, a roarring blaze destroyed the 65-year old General Clark Hotel, 217 N. Clark St. shortly after midnight January 16th, bringing death to fourteen, thirteen men and a woman, and injuries to eight others.

It was reported there were sixty-five guests in the old six-story, seventy-five-room structure at the time of the fire, fifty-five of whom were permanent residents. The fire, according to Chief Fire Marshal Corrigan and John L. Fenn, Chief of the Fire Prevention Bureau, originated in a storeroom in the rear of Wolff's Cigar Store on the first floor of the hotel building.

Fire Spreads Through Shafts

Flames spread rapidly up an open stairway and light and elevator shafts, bursting through the roof. Strenuous rescue efforts by firemen, summoned on

These Philadelphia, Pa., Firemen Take Time Out for Hot Coffee as more than 200 Firemen Battled an Eight-Alarm Fire that Leveled Three Buildings of Henry Schmidt & Bros. Inc., Paper Box Manufacturers in Near Sub-Zero Weather.

numerous alarms, aided by citizens and service men, were effective in saving many, but fourteen died, all but one of them from burns or suffocation. The remaining victim, a woman, dropped to the sidewalk after fruitlessly hanging to a third story window sill. Three persons leaped safely into life-nets held by firemen. A dozen more were carried down ladders. Two servicemen who happened to be passing, aided by pulling down the drop section of a fire escape and coaxing and aiding fightened guests and patrons down from upper floors.

Despite efforts of firemen manning approximately forty pieces of apparatus, the hotel was almost a total loss. A coroner's jury, and city and county investigators joined in an investigation of the fire, and to check on the rumors of negligence in applying safety laws to the hotel. The building is reported to have been inspected two weeks prior to the fire and its two fire escapes found in good condition. The tragedy has spurred the press and civic organizations for more rigid fire prevention laws and inspections. According to one paper there are numerous similar hazards in the city, and Fire Marshal Anthony Mullaney is quoted as saying *"It is only a matter of time before Chicago suffers a major fire disaster."*

Following this, the hard-worked fire department was called on January 18th to fight another serious 5-11 fire which swept a three-story factory building at 18-20 N. Sangamon, causing a $100,000 loss. Four major factories, housed in the structure, some said to be engaged in war production, faced complete destruction, according to Marshall Mullaney. Over fifteen high pressure streams were used to deliver approximately 25,000 gallons per minute in the successful effort to confine this fire within the structure.

NEW HAVEN HOTEL FIRE**

One man dead, a fireman severely cut by flying glass, many of the thirty-four persons in the hotel at the time of the fire rescued down aerial ladders, marked a five-alarm blaze that swept the Hotel Bishop, in the heart of the Yale University district at New Haven, on January 19th with the temperature 15 above zero.

The dead man, Dr. Mavo R. Purple, 32, say fire officials, became confused when he attempted to return to his room for his personal effects and was found by firemen on the floor above his own. One woman of 75 was removed from the third floor and an Army officer and his wife, trapped on the fourth floor rear, were rescued by means of ladders.

The first alarm was sounded at 12:34 A.M.; the second at 12:40 when it was found fire was making rapid headway on the third floor; the third at 12:42 and Fire Chief Paul P. Heinz ordered fourth and fifth alarms at 12:49 and 12:55 A.M. This brought eleven engine and five hook and ladder companies—all the city's apparatus with the exception of three companies that had responded shortly before to an alarm in the downtown wholesale district. All city ambulances, the Red Cross disaster squads and emergency police and firemen were also called. 6,550 feet of 2½ inch hose and 750 feet of 1½ inch hose were laid, the latter for wetting down and salvage work. Five hundred ninety-two feet of ladders were raised, including three metal aerials.

Three deck guns, with 1½ inch tips, were operated from hose wagons; ladder pipes with 1¼ inch tips, were also used on 85 and 65-foot aerial trucks. Hand lines were directed from a fire escape in the rear of the hotel, and from the roof of an adjoining building.

**Thomas F. Magner

LIMA AND OTHER OHIO CITIES SUFFER

An epidemic of serious fires struck Ohio municipalities in January. In Lima, on the 3rd, a $75,000 fire of undetermined origin swept the Lima News building. Two firemen were injured and one overcome by smoke fighting this blaze. The first alarm brought Central trucks No. 3 and No. 5 with Assistant Chief Walter Hydaker, who quickly sent out a general alarm bringing the off shift of twenty-one men to the aid of the twenty-one on duty, with all the city's equipment.

On January 7th, the department was called to a much more serious and fatal fire which broke out on the third floor of the Milner Hotel, raged unchecked for four hours, swept through three other business houses and caused damage estimated in excess of $500,000.

Two were known to be dead, and fifteen persons reported missing following this blaze. One woman victim jumped to her death.

It was necessary to summon help from Wapakoneta, Findlay, Kenton and Delphos, to aid the Lima Fire Department. Civilian defense personnel assisted police and firemen to control the crowds and traffic and in rescue work.

Low Water Pressure

Firemen were handicapped by low water pressure, the city having reduced the water pressure the day before the fire because only a 15-day supply was available.

Fire Chief Harry Taflinger was reported in serious condition after collapsing from exhaustion while directing fire fighting operations. Lt. M. F. Laughlin, just released from the Navy where he served as Fire Marshal at the Great Lakes training station, stepped into Taflinger's post after the chief collapsed and was later named acting fire chief.

* * *

Fatal Akron Hotel Blaze

In another Ohio hotel fire, on January 22nd in Akron, two persons died and 35 others were imperiled. Four persons, one man and three women were hospitalized and others treated for shock.

The hotel building was located on E. Market St. and had been under investigation by the city's fire and building departments for three years because of violations to the local codes. The fire, starting from basement rubbish in the frame-brick building spread rapidly but was quickly controlled by the fire department under Chief Frank C. Vernotzy. Death of one woman was due to a "panicky leap" from a third story window to the roof of a building below. Another victim, also a woman, was suffocated in her bed.

* * * *

Other Heavy Losses in Ohio

Most important fire of the month occured in Fremont where a blaze of "undetermined origin" raced through a 750-foot building of the Fremont Rubber Co. with estimated loss of $500,000. The plant was engaged in compounding rubber for an Akron firm which used the material for the manufacture of tires.

HEAVY LOSSES IN PHILADELPHIA

Just as there seemed to be an epidemic of hotel fires in the middle west, so there were heavy losses by fires in churches in and near Philadelphia, Pa. On January 7th Temple Baptist Church, 22nd and Tioga St. was destroyed in a 5-alarm $100,000 fire. More than 200 firemen using forty pieces of apparatus battled this blaze which started in the basement of the historic old edifice. Firemen were handicapped by the snow, sleet and freezing temperature. When flames shot through the roof nearby residents were forced to evacuate their homes.

This church fire was still being fought when flames were noticed in St. Ann's Convent on Tucker St. in the rear of St. Anne's Church. Forty nuns of the Order of St. Joseph were forced to flee.

This fire called a 2-alarm assignment with seventy more firemen. Most of the damage to the convent was in the roof. En route from this fire, three firemen of Eng. Co. 11 were thrown from their truck when it collided with another. All were hospitalized.

Another $25,000 fire destroyed the Methodist Church at Columbus Boulevard and Asbury Ave., National Park. Apparently caused by an over-heated furnace pipe, this blaze left little of the church, only recently freed from debt. The nextdoor parsonage was saved.

Ignited when a vigil candle fell onto it during mass, a 12-foot Christmas tree was set ablaze on January 7th in St. Joseph's Church, Hammonton, N. J. Several women fainted, but the Rev. Mark Martorelli, pastor, pulled the flaming tree from the altar and, with the aid of others, smothered the flames. Damage was slight.

Million Dollar Textile Fire

On January 13th the fourth serious blaze in Philadelphia in plants engaged wholly or in part in war work caused $1,000,000 loss in one of the buildings housing part of the A. M. Townson & Co., Inc. textile dyers and finishers. Almost $400,000 in textiles and materials for the armed forces were consumed.

Hard on the heels of this "worker" a 3-alarm fire swept the central city offices of the Railway Express Agency, forcing seven persons to flee, destroying valuable records and threatening vital war material awaiting shipment. The fire apparently originated in the record room on the third floor. According to investigators there was no evidence of sabotage.

"Worst Fire in 38 Years' Experience"

The rising crescendo of fires in the Quaker City climaxed on January 25th in one of the toughest periods known by the Philadelphia Fire Department. In a series of fires which struck the city on the coldest day in two years, a family of six perished, more than thirty firemen were injured—five seriously, three factory buildings were destroyed, three others damaged and nearly a score of persons were driven to the streets by two of the city's most spectacular fires. In addition, firemen fought sixty-four other blazes scattered throughout the city in the twenty-four hours starting midnight the 24th. More than 75 per cent of the city's apparatus was called out and 1500 firemen were on duty—some of them twenty-four hours, facing high winds and near-zero temperatures. More than fifty persons received minor injuries in these fires.

The two most serious fires, one on Vine St., in the heart of the downtown section, between 3rd and 4th and the other at 4463 Greene St., brought 400 men and approximately seventy pieces of equipment, civilian defense and other disaster units, extra police and first aid forces.

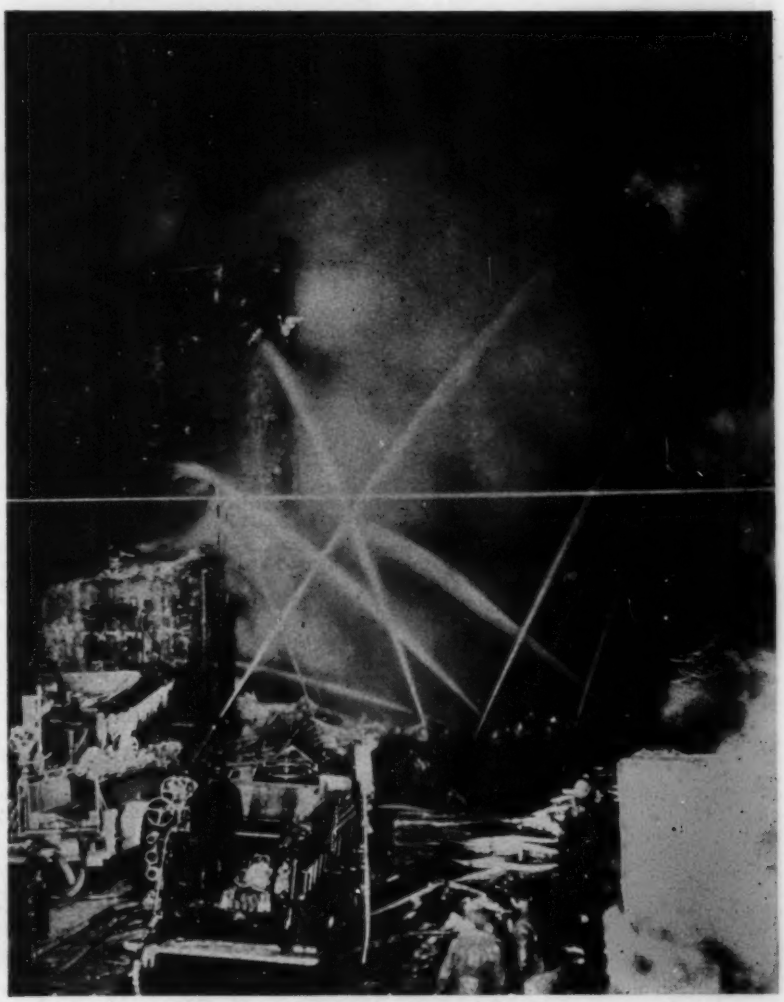
Eight alarms were sounded for the Vine St. fire, which lighted up much of the entire midtown area, destroyed three buildings of Henry Schmidt & Brothers Inc. paper box manufacturers at 324-328 Vine St., damaged the two-story building occupied by a sheet metal works, another building at 251 N. 4th St. and the structure occupied by the Goodway Ptg. Co. at 249 N. 4th St. Five regular and three special alarms were sounded for this near-conflagration. The fire started at 4:15 A.M. and blazed sporadically throughout the day.

Fanned by a 60-mile an hour gale, the flames leaped New St. to ignite the coping of Old St. George's Church on the corner of 4th and New but firemen saved the 128-year old Methodist structure; St. Augustine's Catholic Church on another corner was also threatened but saved.

William F. Cowden, Chief Engineer, termed this blaze the most difficult to fight he had seen in his 38 years' experience. He and about 40 firemen were treated for injuries, mostly for falls on the ice. Three firemen were hurt when the west wall of 328 Vine St. collapsed. Most seriously injured was Hoseman Vincent Mulligan, Eng. Co. 1, who suffered a brain concussion and body bruises. A negro fireman, Edward Jackson, of Eng. Co. 11 suffered a possible fracture of the hand.

First aid stations were established early in the fire; civilian defense ambulances were dispatched to both this, and the fatal fire which killed Mrs. Mildred Moyer, and her five children in the Greene St. dwelling fire, discovered shortly after 6:00 A.M. Neighboring tenants were driven out of their homes by this fire.

Among the other fires in the area, at this same time was one, caused by a gas main break in Conshohocken, which damaged several houses and shut off gas service as far distant as Jenkintown and other suburban sections of the city.



Philadelphia Firemen Are Shown Fighting an Eight-Alarm Blaze in the Factory of Henry Schmidt & Bros., Paper Box Manufacturers.

FCC ASSIGNS FIRE SERVICE RADIO COMMUNICATION CHANNELS

Commission Proposes to Allocate to Fire Service 35 Out of Requested 40 Frequencies for All Types of Emergency Fire Communications

By Roi B. Woolley
Chairman, Committee on Communications, International Association of Fire Chiefs

ACCORDING to the Report of the Federal Communications Commission, dated January 15, 1945, "in the matter of Allocation of Frequencies of the Various Classes of Non-Governmental Services in the Radio Spectrum from 10 kilocycles to 30,000,000 kilocycles," the Commission will make available to the post-war fire service most, if not all of the radio channels requested of the Commission.

This action climaxes the comprehensive presentation of the fire service, made before the Commission last year through Committee 2 of the Radio Technical Planning Board (set up by F.C.C. action to review the problem of post-war radio in all its phases) as previously described in FIRE ENGINEERING.

Chronology of Fire Service Radio

In 1930 the Federal Radio Commission in General Order No. 85 made one medium radio frequency available for emergency communication for fire boats. In 1933, the Federal Radio Commission adopted rules and regulations governing the operation of marine fire stations and allocated the frequency 1630 kilocycles for this purpose. The Federal Communications Commission in 1938 added two very high frequencies to the previous allocations and, in 1940, made the frequency 117,550 kilocycles available for use on an experimental basis only. Emergency radio communication has been furnished to fire departments through facilities of police departments since the inception of the police radio service.

In small communities where the police message traffic is light, the communication service for both the police and fire departments is tendered over the same transmitting facilities. In the larger municipalities, where the volume of police message traffic is great, it is frequently necessary to assign separate police stations for the transmission of emergency messages relating solely to the activities of the fire department.

In recognition of the need for communications with land units of the fire department, and the desirability of providing separate facilities for police and fire departments in large municipalities; the Commission, on May 9, 1944, approved certain amendments to the rules and regulations governing the emergency radio service. These amendments deleted the station classification of "marine fire" and, in lieu thereof, established a new class of station designated as "municipal fire stations." The new class of station provided separate communication facilities for municipal fire departments. The "municipal fire station" is defined in the rules as "a radio station licensed in the emergency radio services, operated by a municipality and used for emergency communications relating directly to the official fire department activities." The scope of service permitted the new class of station differs from the marine fire class in that inter-communication between fire department headquarters and land vehicles of the department is permitted, in addition to inter-communication with fire boats.

Walkie-Talkie Used in N. Y. F. D. Drill

There were seven licensees of municipal fire stations, with no applications for licenses pending, at the time the fire service made its presentation for further independent frequencies before the Commission, through the Radio Technical Planning Board, Committee 2, in October last. At that time it was reported there were a total of nine fixed stations and 102 portable-mobile and portable stations licensed in this service. The number of municipal fire departments operating radio stations under municipal police station classification is not known, says the Commission "although it is reasonable to assume that there are many such stations."

According to available figures, it appears that about 90 per cent of all cities above 10,000 population are totally without any form of radio service for the fire department. The remaining 10 per cent of such cities are using the service, shared with police, but operating as a police radio station on police radio frequencies. The evidence placed before the Commission indicates that most of these shared police-fire operations are conducted over channels and facilities already over-burdened by police needs.

At the time of the October hearing, 92 cities of over 100,000 population and 890 cities between 10,000 and 100,000 population, had indicated their intention and desire to use radio for their fire service. In addition to the fixed or land stations required in each of these municipalities, it is estimated that 128,000 mobile fire department units will be fitted with radio equipment.

Proposed Scope of Fire Service Radio

Three separate uses of radio have been proposed for municipal fire departments: (1) inter-communication between fire department headquarters and mobile units; (2) the use of portable equipment at the scene of the fire for inter-communication between fire fighting personnel; and (3) inter-communication between fire alarm headquarters and two or more municipalities for urgent communications which cannot be handled over existing wire line facilities.

What the Fire Service Requested

Committee Two, of Panel 13, R.T.P.B., which stated the case for the fire service before the Commission and which includes members of the International Association of Fire Chiefs and the International Municipal Signalmen's Association, requested 30 channels, 40 kc. wide in the band 30 to 40 megacycles. 10 of the channels were proposed to be used for radiotelephone, point-to-point communication between central fire dispatching point and subcontrol points. and between fire departments of adjacent municipalities and other services closely coordinated with the municipal suppression forces such as airports, private fire brigades, railroads, and other agencies depending upon prompt assistance. It was also proposed to use these same channels for transmission of facsimilie messages to fire departments, fire stations, etc. The remaining 20 channels in the 30 to 40 megacycle band were to provide facilities for inter-communication between land stations and mobile or marine units of the fire service.

In its proposed assignments of frequencies issued January 15, 1945 the Commission failed to set aside the full 40 channels desired by the fire service, but did assign 35 frequencies. It pointed out that because of the demand for frequencies in this part of the spectrum it was impossible to allocate the number of channels requested. However, 15 channels have been tentatively assigned to this service in the 30 to 40 mc. band which, it is believed, should provide sufficient channels for communications in those cases where it is necessary to cover large areas.

The fire service requested 10 channels, 50 kc wide, between 100 and 150 megacycles. These channels were claimed to be the minimum requirements necessary to provide channels for communications at the scene of a fire and to coordinate the operations of fire fighting forces engaged in fighting fires in large buildings. marine fire units, forest fires outside the jurisdiction of the forestry service, mountain battalions, etc. The

(*Continued on page* 134)

I.A.F.C. Directors Meet

The annual meeting of the board of directors of the International Association of Fire Chiefs was held at the Hotel Pennsylvania, New York City, on January 29-February 2. All district associations were represented.

The board received and approved the proposed membership drive, to be conducted by the President's Advisory Committee.

No detailed plans were made for an annual convention, for a convention will be contingent upon permission being granted by the Office of Defense Transportation. Application will be made to the ODT in a few weeks.

In the meantime, tentative dates were set at August 21-24, with Cleveland, Ohio, the convention city and the Hotel Statler as headquarters.

Many timely topics were discussed by the group, including the recent recognition of fire service by the FCC, estimating fire losses, disposal of OCD fire apparatus and equipment, and the new Selective Service threat to the fire department personnel.

Instructors Hold Record Meeting

With an attendance of nearly 600, the seventeenth annual Fire Department Instructors Conference, held at Memphis, Tenn., on January 9-12, broke all previous records.

An outstanding program was presented, covering muncipal, industrial and military establishment fire protection.

Typical of the topics treated were the following: The Cleveland Gas Explosion and Fire; Training the Small Town Fire Department; Plastics and Other Products; Weather and the Fire Service; Static Electricity; Determining Fire Causes; Airport Fire Prevention; Ship Engine Room Fires; The Control of Fires Involving Liquefied Petroleum Gases; Magnesium and the Fireman; Airplane Crash Fires, and Looking Ahead in the Apparatus Field.

The Conference is sponsored jointly by the Western Actuarial Bureau of Chicago, and the Memphis Fire Department.

Richard E. Vernor, the Chairman and the sparkplug of the organization, was ably assisted by Harry K. Rogers, Vice-Chairman, and Emmett T. Cox, Secretary. The office of the Conference is Room 900, 222 West Adams Street, Chicago, Ill.

Photos by Hugh Walker

At the Fire Department Instructors Conference

Top row: J. R. Dickhout, Dallas, Texas; Eugene Ray, Port Arthur, Texas; L. F. Holland, Instructor, Dallas, Texas; George Richardson, Sec'y, Int'l Assn. of Fire Fighters; A. I. Rodgers, Fort Worth, Texas; R. Joyner, Eureka Fire Hose, Dallas, Texas.

Second row: Fred Witler, Ass't Chief, St. Louis, Mo.; James A. Flynn, Potter Mfg. Co., Chicago; James M. McCormack, Comm. of Insurance & Banking. State of Tennessee; W. J. Scott, Fire Marshal, Province of Ontario, Canada.

Third row: Deputy Chief L. Reckenbecker, Memphis; Capt. Maynard, Memphis, F.D.; Prof. L. H. Provine, Dean of School of Architecture. University of Illinois; Chief Tom Hardwick. DuPont industries.

Fourth row: Harry K. Rogers, Conference Vice-Chairman; Fred Heisler, Training Consultant, Oklahoma A. & M. College; Robert F. Hamm, Instructor, Indiana Inspection Bureau; Richard E. Vernor, Conference Chairman; Mrs. Connie O'Sullivan; Chief Connie O'Sullivan, Memphis, Tenn.; Emmett T. Cox, Conference Secretary.

Fifth row: Dr. W. A. Ross, U. S. Dept. of Education; M. D. Whale, State Supervisor, Vocational Education, Michigan; Edward C. Rumsey, Instructor of Fire University of Michigan; Edward L. Rector, Chief, Grosse Pt. Park, Michigan.

Bottom row: Engineers' Dinner at Claridge Hotel: N.B.F.U. engineers, State Rating Bureau engineers, Factory Mutual engineers, and Underwriters' Laboratories engineers.

Detroit City Airport Installs New Type CO_2 Truck

On January 12 a new airport fire truck made its premiere appearance at the Detroit Municipal Airport—said to be the first equipment of its kind to be used in any civilian airfield. The truck, made by Cardox Corporation, Chicago, Illinois, incorporates the latest improvements developed from the experience of more than 200 airport fire trucks in the United States Army Air Forces, developments which until now, because of wartime restrictions, were available only to military air bases at home and abroad.

The truck, which was demonstrated at the Airport before a large group of officials, utilizes a combination of extinguishing mediums—having a capacity of two tons of liquid carbon dioxide and 200 gallons of foam solution. The carbon dioxide is carried on the truck in a single mechanically refrigerated pressure vessel in which it is maintained at a temperature of approximately O°F, and at a pressure of 300 pounds per square inch. When released this liquid CO_2 expands several hundred times into CO_2 "snow" (dry ice particles at –110°F) and very cold CO_2 vapor. This is used to flood the fire zone with an inert gas that reduces the oxygen content of the atmosphere in the area to a point where it will not support combustion. At the same time the vapor and "snow" reduce heat necessary for combustion.

The mechanical foam is supplied under pressure through either fixed nozzles on the truck or foam guns on hand lines. The combination of extinguishing agents provides fast extinguishing performance, necessary in fighting airplane crash fires which are likely to be very large, very hot and virtually instantaneous.

How the Truck Operates

Across the front of the truck, immediately below the bumper, is a linear nozzle with a discharge capacity of 1250 pounds of carbon dioxide per minute. Mounted on this nozzle are four fixed foam guns each of which discharges at the rate of approximately 25 gallons per minute (foam is under pressure supplied by the carbon dioxide itself). The function of this nozzle is to direct the application onto the base of the flames and prevent spread of fire beneath the truck, which is driven within a very few feet of the blaze.

Mounted in front of the truck radiator is an elevated CO_2 nozzle of 1250 pounds of carbon dioxide per minute capacity. Affixed to this is a 35-gallon-per-minute foam gun. This front nozzle is maneuverable from the cab and is effective in building up a high concentration of CO_2 quickly and backing up action of hose line operators.

The truck has two CO_2 hose lines, each of which releases approximately 750 pounds of carbon dioxide per minute. These lines are mounted on reels, one on each side, immediately behind the truck cab. When the nozzles are removed from resting place on running boards, the release mechanism automatically opens a master valve, supplying CO_2 under pressure to the nozzle. Actual discharge is controlled by a squeeze-type valve. Each reel is equipped with 100 ft. of 1½ in. hose. There are also two 100 ft. foam hose lines equipped with guns which discharge both foam and straight-stream. A two-way valve body allows the operator to discharge this foam or straight-stream, either separately or together. These guns have a capacity of approximately 30 gallons each.

In addition to all this discharge equipment, there is a two CO_2 bayonet type nozzle which is used to pierce and flood plane compartments with CO_2. This is effective in engine nacelle fires or in reaching fires in closed sections of the plane.

Miscellaneous specifications: gross vehicle weight of unit is said to be 40,000 to 46,000 lbs.: engine h.p. 180-200; six wheels, all wheel drive; air brakes. Body all metal.

Fire Prevention Week Awards

The International Committee of Judges appointed to review the reports submitted to T. Alfred Fleming, Director of Conservation of the National Board of Fire Underwriters and Chairman of the Fire Prevention and Clean-Up Campaign Committee of the National Fire Protection Association, by cities and towns in the United States and Canada, outlining their activities during Fire Prevention Week, October 8 to 14, 1944 has issued its report.

Honors for the largest number of reports filed went to the State of Illinois, John H. Craig, Fire Marshal, with Indiana, second. The Province of Quebec, F. X. Ahearn, Fire Marshal, was third.

Of the communitites receiving Merit Awards, Chicago, Ill., was first of the 27 cities having 90 per cent and over, while Stevens Point, Wis., led the 55 municipalities having a special merit grade of between 80 and 89 per cent.

A total of 2,121 reports were received from towns and cities in the United States, Canada, Alaska and Hawaii. Of these, 498 were from Canada. This is said to be a large increase over any previous year.

New York City filed its first report in the Merit competition, taking fourth place in the national standing.

Scouts passed the required "Merit

The records show that 9,630 Boy Badge Test" in firemanship.

A new Industrial Division, inaugurated last year, includes an "all-year" program in Fire Prevention and Protection. The 1944 winners in this group were: (1) Carnegie-Illinois Steel Corporation, Gary, Ind. (2) Norton Company Worcester, Mass., and (3) Consolidated Shipbuilding Company, Morris Heights, N. Y.

Testing Carbon Dioxide Airport Fire Truck at Detroit

Connecticut Firemen Name Committees

President John J. Boland of the Connecticut State Firemen's Association has appointed the following commitees for the coming year:

Legislative committee: Thomas Martin, New London, chairman; Edward Turbert, New Haven; S. E. Jenning, Bridgeport; William Silk, Stafford Springs; James Healey, Willimantic; James Grote, Chester; Matthew W. Beary, Torrington; and Ralph Marone, Hartford.

Auditing Committee: Robert Probst, West Harfford, chairman; Frank Vellali, West Haven; and William Fitzgerald, Waterbury.

Other officers elected besides Mr. Boland at the annual convention were: Vice-President, William J. Hamilton, New London; Secretary, John Moehring, Stamford; Treasurer, Charles Brundage, New Haven; Chaplain, Rev. M. J. Thompson, Niantic; County Vice-Presidents, Omed H. Bruneau of North Grosvenordale, William J. Canty of Burrville, Walter C. Creighton of Waterford, Harold J. Cromak of Unionville, J. Franklyn Dunn of Middletown, Andrew J. Flanagan of New Haven, Frank M. Luond of Eagleville, and George Smith of Shelton. William J. Degnan of Derby, last year's president, remains on the Executive Board as past-president.

Proposed Roofing Code

The National Fire Protection Association has released its "Proposed Building Code Requirements for Roofing," as submitted to the American Standards Association, Committee A51-Sub-Committee 11, November 11, 1944.

The report, which consists of a foreward by Robert S. Moulton, Technical Secretary of the N.B.F.U, together with some half dozen attachments and exhibits, points up the hazards of wooden shingles and the wisdom of roof coverings of fire retarding types.

For Practical Discussion of Current Fire Department and Fire Management Problems

MILITARY INSIGNIA ON FIRE DEPARTMENT UNIFORMS

WITH the war, citizens of our municipalities have become familiar with the insignia used by the Armed Forces to identify their officers. The suggestion has been made that the adoption of such a plan by fire departments might have advantages.

Below are a number of replies from chiefs in representative cities throughout the country. They are by no means unanimous. Some chiefs report that they believe the present uniform is outmoded and should be modernized by the addition of bars, leaves, an eagle, stars, etc. Others believe that the trumpet and axe is symbolic of the fire service and with the proper publicity could be easily identified by the public.

Readers are invited to send in their comments on this subject or on next month's subject, which appears in the box on the following page. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

Discussion of the Topic

William H. Davis, Chief, Pittsburgh, Pa.: I wish to state that in Pittsburgh we do not favor any change in insignia for officers until we have affected some change in the antiquated present style of uniform. This is a post-war proposition.

I believe we could learn quite a bit from the present U. S. Navy officer's blue uniform.

Already, the battalion chiefs and other officers of the department have adopted the naval officer's type of cap, with changeable blue and white top, according to season. Badges for these caps were furnished by a New York house.

Leo B. Barry, Chief, Utica, N. Y.: Because of the fact that many fire departments have different ranks among their officers, it is undoubtedly difficult for the public to distinguish between the various ranks.

In our department we have at present only two ranks of chief officers: the chief who wears an insigne of gold with five trumpets and deputy chiefs who wear gold insignia with three trumpets. Our captains wear silver insignia with either two axes or two trumpets, depending on whether their company is truck or engine. The lieutenants wear insignia with one axe or trumpet.

It would seem that these insignia would be readily recognizable by the public if we employed a little publicity on the subject.

However, I would not be opposed to any uniform insignia for fire department officers, but hardly favor shoulder insignia as I feel that this is a distinguishing mark of the military service and should be kept that way.

J. F. Finnegan, Chief, Richmond, Va.: I am opposed to changing the insignia of the fire department. We have worked and built too long to get an organiaztion of our own, than to undo in a few days everything we have accomplished in the past years.

HERE IS THE QUESTION

The significance of the trumpet and axe on rank insignia in the uniformed force of fire departments is not understood by the general public. In some departments a fire officer wears a badge bearing the title of his rank, but this practice is not universal. In doubt of a fire officer's rank, John Q. Public takes no chance and frequently addresses every fireman and officer as "Chief."

The war has made the public conscious of distinctions in the gradations of military rank. The average citizen now quickly recognizes the comparative authority of those wearing the gold bar, the silver bar, double silver bars, the gold and silver leaves, the eagle and the stars. These insigne, while original with the Army and the Marine Corps, are also used on occasion by Naval Officers when in fatigue or summer dress.

To make ranks in the fire service more easily identified, do you believe it advisable to add to the shoulders of fire officers' dress uniforms military insignia similar to the various ranks in the armed forces?

What advantages or disadvantages do you believe such a plan would entail?

The departments are being militarized to too great an extent anyway. Of course, this is just my opinion. I cannot see any advantages to it.

William F. Cowden, Chief, Philadelphia, Pa.: The most important duties of the different ranks of firemen and officers are performed on the fire ground. The ranks of men who perform these duties are recognized by the officer in charge of the fire. As far as the public is concerned, it makes no difference what they take the ranks as, as it has no bearing on the success of the department. I do not believe you could have any insignia which would be recognized by the public as a whole.

William C. Gavin, Chief, Yonkers, N.Y.: I do not believe it would be advisable to add to the shoulders of fire officers' dress uniforms military insignia similar to that worn by the armed forces.

A fireman or fire officer on official business introduces himself by name and rank. I believe the average citizen of a large city is concerned only when he has official business to transact with a member of the fire department.

John C. King, Chief, Hartford, Conn.: The chief of this department wears an insigne of five trumpets and a badge bearing his title on his coat. The deputy chiefs' insignia have two trumpets and also badges bearing their titles. The captains and lieutenants respectively wear badges and insignia denoting their ranks. Privates have a hat piece with the engine company number on it and a badge on their coats with their own numbers.

In my opinion, I believe there is quite a bit of distinction between the fire department and any branch of service. If they wore military insignia similar to the various ranks in the armed forces, I think it would be very confusing.

A. Brown, Chief, Birmingham, Ala.: I do not believe there would be any advantage in firemen wearing insignia of their rank on the blouse or dress coat.

The badge on the cap shows the wearer's rank and if not known by citizens, the same lack of knowledge would apply to the shoulder insignia.

I do believe firmen should wear service stripes on the sleeves of their dress coats, for instance, a gold stripe for each five years' service.

George E. Jacobs, Chief, Canton, Ohio: If a proper publicity campaign were to be conducted I believe the public would be able to recognize and address a fire officer by his proper rank as readily as if we were to adopt other insignia.

George E. McGaw, Chief, Fall River, Mass.: I do not see any advantage to be gained by placing bars on the shoulders of officers in the fire department to make their rank easier to recognize. I am of the opinion that it would make it more complicated.

John J. Tubridy, Commissioner of Fire, Buffalo, N. Y.: I believe that lieutenants and captains would be recognized more readily if they wore silver bars or trumpets. Battalion chiefs and deputy chiefs could not be identified by using military insignia.

It is traditional to use the ax and the trumpets, and I personally believe these marks are symbolic of our fire department and the fire service.

We have purchased new badges for

the chiefs, captains and junior captains (lieutenants). They are inscribed for their respective rank and the company number (axe for hook and ladder, trumpet for engine company). Buffalo, N. Y., is inscribed on each badge so we are well identified here.

Edward F. Dahill, Chief, New Bedford, Mass.: I cannot see any advantage to adding shoulder insignia to the uniforms of fire officials.

While it is necessary for firemen to know and to be able to identify their officers, especially on the fire ground when all are wearing rubber coats suitably marked white helmets, worn by the chief and other ranking officers appear to me to be sufficient.

* * *

The following replies are in answer to a previous round table on the post-war value of military fire training.

Charles L. Sherman, Sgt., 3303 A. A. F. Base Unit, Sec. C., Stockton Field, Cal.: Upon reading the round table in the December issue, I found it one of the most interesting of all previous discussions.

Before enlisting in the A.A.F. I served seven years as a fireman and had obtained the rank of Chief six months prior to enlistment in the service. After basic training I was placed in the fire department, in which I have served approximately two and one-half years. In that time I have seen and learned more about fire prevention and extinguishment of structural and airplane fires than in the seven years prior to my enlistment.

For the past year I have trained many men. Some have had previous experience in some of the nation's largest departments; others have had none.

Training and drilling under the new methods have taught me that the fire service is like everything else. It has to change with time and the old ideas that were used ten or twenty years ago are out of date.

I do not agree with some of the opinions formed in the December issue, that the men trained under military fire training would only be good fighting fires involving inflammable liquids, because the new methods used in combatting fires are used on all fires, whether they be fires involving inflammable liquids or structural fires.

I also believe that men who are taught under the military fire training program returning to civilian life after the war, will be good firemen for any city department.

Richard S. Whiting, Army Air Corps, Sec. "M", Keesler Field, Miss.: I agree wholeheartedly with the various chiefs who have sent in their ideas that ex-servicemen trained in fire fighting will be of value as future firemen and also that their knowledge of fire fighting and prevention will help to bring fire losses down in future years. Nothing has been said, however, of the huge reserve that will be on call when the need arises. Every disaster and conflagration requires hundreds of volunteers who gladly offer their services. Some mention has been made of untrained volunteers being more handicap than help at large fires. Therefore, I believe that men trained in fire fighting either in the armed services or private fire departments or auxiliary units should have in their possession some means of identification stating their qualifications as firemen. This could act as a pass through fire lines when more manpower was needed and would assure the officer in charge of receiving assistance from men who have a knowledge of the duties they are to perform and just what is expected of them in the line of duty.

Editor's note: Mr. Whiting is a former member of the Bethleham-Hingham Shipyard Fire Department.

John A. McCracken, Chief, Gary, Ind.: It is my personal opinion that the fire service throughout the nation will greatly benefit by the instruction given in fire prevention and fire extinguishment by all the government agencies, particularly the men in the armed forces.

It is my firm belief that these young men, just out of school a very short time, are highly receptive to new ideas.

It is also my opinion that these men, returning after the war, will fill a great need in the fire service, as they will replace men trained in the old school, who are reluctant in some ways of accepting the advanced training and education so necessary to the present day fire service.

I also believe that these men should be given a high preference rating in their applications for the fire service. It will also be necessary for the fire departments to advance and progress with the modern day method of fire extinguishment and equipment.

John F. Healy, Chief, Denver, Colo.: The training which fire department members in the armed services are receiving should be very valuable, both to the members themselves and to the departments to which they return after the termination of the war.

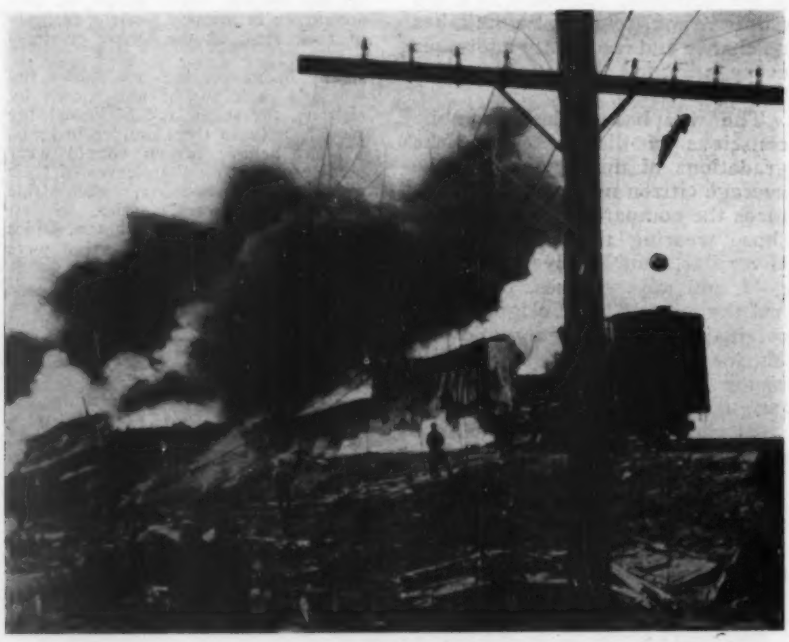
They should be able to disseminate this knowledge and information to other members of their department on methods of handling the different types of fires which they may have encountered while in the service. Although their fire fighting experiences may have been limited to certain types of fires, the training they have received should be an incentive to the other members to assimilate this information in order to keep abreast with modern methods.

Edward J. Cannon, Chief, Norfolk, Va.: I have had, in this seaport town, close contact with the United States Navy Fire Fighting School, and have found that their training is so valuable as an adjunct to our own fire training that I made arrangements for all of the members of the Norfolk Fire Division to receive this training. We have found that it was very helpful.

With regard to the young men who have had this training, I feel that upon their return they will provide a large group of citizens to whom their fire department is well known, and that their interspersion in the community will make the members of the community more fire conscious. In addition, in case of any emergency, they will provide a backlog of trained fire fighters, which, I am sure all will agree, is an excellent reserve to have.

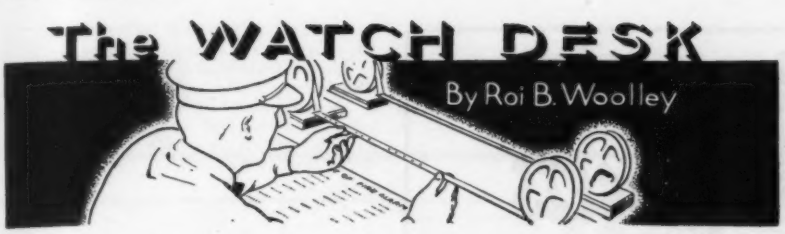
THIS DISCUSSION WILL BE CONTINUED

Due to the large number of Chiefs who contributed their experiences, the discussion on this subject will be continued in the next issue.



War in America

Fire and bomb explosion on Santa Fe main line, forty-three miles east of Clovis, N. M., in November, killed one, injured several, disrupted communications and traffic; derailed thirty-nine freight cars, many of which were burned and blasted.



Our inquiring reporter overhauls the firemanic news of the day

Why Dispatchers Go Crazy!

This 'un comes from Toledo (O.) and is related by William Armstrong, senior fire operator, and George Schindler, junior, who were working the 3:00 P.M. to 11:00 P.M. trick at the fire alarm telegraph H.Q.

Came a wildly excited voice over the the telephone:

"Fire department? Fire department!"

"Yes, this is the fire department. What is your trouble?" replied Brother Armstrong.

"Fire department—fire department, come down here quick! My house is on fire!"

"Where's down here?" asked the operator.

"Down here! Down HERE!! My house is burning down!!!"

"All right, all right — WHERE IS DOWN HERE?" repeated Armstrong attempting to make sense of the call from the frenzied citizen.

"Why! just put your head out of the door and you can see where the fire is!" the man shouted.

It was a job convincing him that he wasn't talking to the men in the fire station across the street and that before those men could hurry to his help he'd just hafta give up his address, but t'was done, and another "citizen" had his first lesson in giving an alarm.

* * *

Rescued—but Resentful

Miss Emily McCloskey, living on the second floor of a three-story frame house in Jersey City (N. J.) was trapped in her apartment about 11:00 A.M. one day by a fire which swept up the stairs. She had to sit on a window sill until firemen carried her down a ladder, a bit singed—but still hotter "inside."

Miss McCloskey spurned the idea of going to a hospital. Instead she was going to Police Headquarters—and did. There she related that she had seen her downstairs neighbor, Mrs. Margaret Boyle, starting a fire in the hallway. Mrs. Boyle used paper, kindling, kerosene and a match, Miss McCloskey said. So, detectives searched out Mrs. Boyle, arrested her on charge of arson. Fire caused damage amounting to $1,500. Mrs. Boyle said her landlady refused to redecorate her apartment, and "she'd had trouble" with the lady upstairs."

* * *

Spiders and Snakes Give Firemen Willies

Not the kind that come out of a bottle, but the real article gave the Brothers of Philadelphia and Red Oak (Ia.) the heebeejeebies.

From John Freas, Eng. 52, Philadelphia Fire Department, comes the account of a response of Eng. 54, that city, accompanied by two red cars and an emergency patrol, to 1127 N. 63rd Street. Upon arrival, says the record, the firemen were met by two panic-stricken girls, who pointed speechlessly toward the second floor.

In a corner of the stairway was a huge spider web, complete with fat spider — and no fire! After killing the spider, all hands returned to quarters wondering "what next?"

Out in Red Oak (Ia.) lack of fires give the vamps little work, but they more than make up for it by responding to the "wild-goose chases,"—you know, the cats-out-of-trees, and babies-out-of-bathrooms, et cet'.

Back in October came the payoff. An unidentified woman called them in wild haste for help. When they arrived she said there was a big, ugly snake slithering around in her front yard, and would they please do something about it. They did—the 'viper' being a harmless bull snake. No bull!

* * *

Women "Man" Fire Alarm Bureau

Pasadena (Calif.) has combined the fire alarm and fire prevention bureau records units in one office which is now "manned" entirely by women — two women on duty each shift, one at the switchboard and the other keeping records. If there's a fire alarm the clerical work is abandoned and one operator keeps in touch by two-way radio with the apparatus dispatched to the fire while the other handles the switchboard.

Be keerful of yer language, fellers!

* * *

Believe It or Not

Chief Dan Tierney, Arlington (Mass.), has a rep' for reliability. He says he'll vouch for his contribution, which reads:

> "While responding to an alarm for a house struck by lightning on Broadway, Arlington, firemen riding ladder 2 of the Highland fire house had a thrilling experience. . . . when a bolt of lightning struck the apparatus. The only damage was to a fireman's axe. None of the firemen on the ladder truck was injured."

We dunno just what, but this seems to set some sort of a record!

* * *

"Hot Off the Tape"

The Law Committee of the Firemen's Association of the State of New York, Seth T. Cole, Chairman, as issued the *"Final Legislative Bulletin for* 1944" covering the legislative action taken by the State up to the time the Legislature adjourned. . . . In Little Rock, Ark., firemen saved Bishop John Morris of the Little Rock Roman Catholic Diocese—an invalid—from suffocation when fire swept part of his home. . . . The fire-blackened premises of the once-gay Cocoanut Grove night club in Boston, Mass., where nearly 500 persons met death on the night of November 28, 1942, have been offered for sale. . . . The oft-told hazard of leaving children alone in a closed house was demonstrated December 22 when of five small Negro youngsters left for four hours in Brooklyn, N. Y., tenement one was dead, others injured as result of fire caused when one child lighted a piece of paper at a coal stove and carried it into the bedroom. A policeman was overcome rescuing the four survivors. . . . Paul Porter, Democratic National Committee publicity chief during the fall campaign, was appointed chairman of the Federal Communications Commission by President Roosevelt. . . . Losing his balance while on the ramp of the village incinerator, at Mamaroneck, N. Y., Herbert Whitcomb, Jr., 16, fell fifteen feet into the blazing pit below. He died later in Port Chester hospital. . . . In Coffeyville, Kans., a fellow who turned in a fire alarm by telephone made this request: *"Please come as quietly as you can."* Firemen said they were sorry but they *had* to be noisy! A regulation requires them to use a siren. Hunh! (Thanks J. B. L.). . . . While firemen in Hutchinson, Kans., were sitting around discussing Einstein's theory, there came a great to-do at the station house door. A passerby was squawking *"Fire, Fire"!* And that's how the boys learned the upstairs was ablaze! (Thanks J. V. de W.). . . . Just before his three-room bungalow at Midvale, N. J., burned to the ground, firemen removed the body of Harry Harriott, 58, and that of his dog, snuggled close to him. Both had died of suffocation. . . . According to Fire Marshal Strohm of Iowa, 152 Iowans died of burns in 1943.

Photo Courtesy Bill Herries

N. Y. F. D. Ersatz Yule Tree Decorations

Came the night before Christmas, and all through the firehouse of Engine Co. No. 54 the bluecoats were stirring—in search of some ornaments for their Company Christmas tree. But alas, and alack, due to OPA, WPB and the war, none were to be had! Nothing daunted, they improvised their own embellishments, from old pinochle cards, tin cans, paper bags, scraps and salvage—with the above result.

SHORT CUTS AND GADGETS

DOOR BELLS ON TRUCKS

From George E. Perrin, Chief of Fire Department, Continental Denver Modification Center, Englewood, Colo., comes an idea that is an extension on one that has already been introduced into the fire service. We refer to the method of signaling between tillerman and driver of modern aerial trucks.

Chief Perrin writes:

"The gadget page is swell. The following idea we have found of considerable use in our paid department when rigs were used for standbys of various kinds and the size of the crew is small. It also works out fine in a volunteer department when the truck is undermanned.

"Install a door bell in the cab of the truck with the push-button operating same, mounted conveniently at the rear of the truck. This will enable the man or men on the tail-board to signal the engineer (driver) in case it is necessary to stop, slow down, etc. We use a very simple signal system—one bell means stop; two bells go; three bells reverse, and four bells slow. As the ordinary bell operates on six volts, it can draw current from the truck storage battery."

Thank you, Chief Perrin for your kind words, and workable idea.

* * *

TAKING SUCTION IN SHALLOW WATER

From Richard Adelman, Fair Lawn, N. J., comes a suggestion which, while not new, is worth publishing as a reminder. Says Brother Adelman:

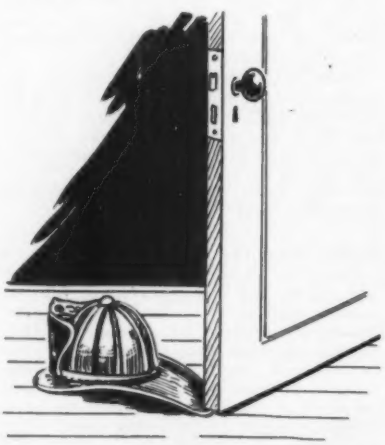
"Enclosed is a drawing illustrating a very efficient way to keep mud and other matter out of a pump, when taking suction from a pond, lake or stream, etc., where the water is shallow and dirty.

"Here in Fair Lawn we have found that by using a 12 or 14 foot ladder placed under the suction hose, sand, leaves and other matter are kept out of the suction hose and pump. If the bank is steep a rope can be tied around the folding hooks and fastened to the pumper or a convenient tree, stump or large rock. The ladder holds the suction hose anywhere from 8 to 12 inches above the bottom."

* * *

STILL MORE "HOLDER-OPENERS"

We seem to have uncovered a veritable mine of ideas with our "door-and-window-opener gadgets." Here's what Lieutenant William J. Cook, H. & L. Co. No. 123, N. Y. F. D. (a previous contributor) says:



"In your last two issues, you published articles on various ways to keep doors open at fires. The ideas were very good, but I have found that after awhile, a person will get careless, and mislay or forget the door wedge or piece of cord, and will not have them on hand when needed.

"Every fireman carries an excellent door-wedge at all times, although he may not know it. It is part of his equipment that he must wear at all fires, his fire helmet. If the helmet is slid under the door (as illustrated) it will hold the door open, until the room is vented, and some other means of keeping the door open is found."

The Lieutenant has also another "Short-cut." He says:

"A soda and acid extinguisher can be used to extinguish small oil fires. such as in an oil burner or portable oil heater, if the operator places his finger over the

nozzle causing the stream to break up into a spray. This acts exactly as a fog nozzle, and smothers a fire quickly."

Seems to the editor that civilian defense folks recommended this finger over the nozzle idea to create a spray for fighting incendiary bombs, didn't they? At any rate, the idea is good, Lientenant, and a check goes to you for it, and your illustrations.

* * *

SERVICE OPERATION CHART

This one is adopted from "Army's Fire Service," W. Lewis Armstrong, Old Forge, N. Y.—"Fire Chief's Quarterly Service Bulletin."

"One of the best records for a small department to keep track of their apparatus is on the wall back of the truck at Morrisville, N. Y. It's made up on a piece of 24 column analysis paper and gives a complete picture of how they have taken care of their fire truck. Across the top from left to right are the months of the year over each column. Twenty-four gives two years of operation. Then down the page on the left-hand side under different headings are these things to be done. This is in excess of the check made after fires. Under the heading of EVERY MONTH: Check or fill gas tank; Check or fill radiator; Test anti-freeze; Check oil; Inflate tires to 70 pounds; Check or fill battery; Test battery or recharge; Wash all glass.

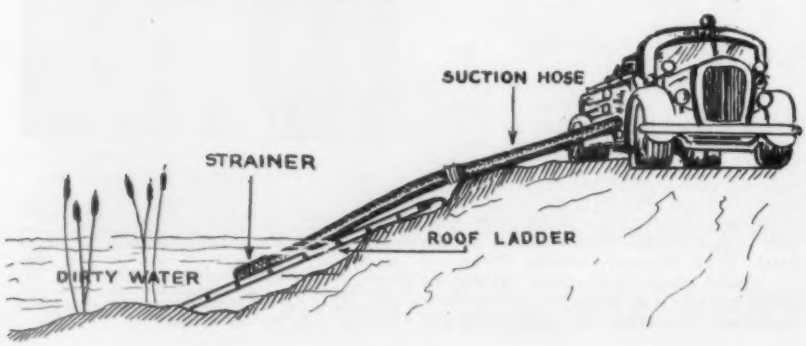
"Under the heading of EVERY THREE MONTHS: Guess what? Repack hose.

"Under the heading EVERY SIX MONTHS; Change oil; Lubricate chassis; Clean and refill air filter; Check transmission grease; (This all happens every November and May).

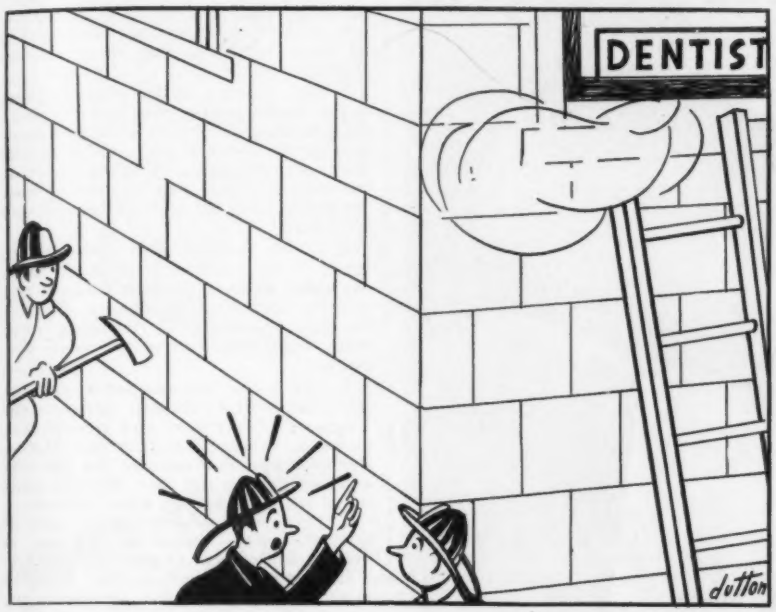
"Under the caption EVERY YEAR IN MAY: Replace all mask canisters; Recharge extinguishers; Test hose at 200 pounds; Oil fire alarm siren; Clean booster tank trap; Change grease in differential; Clean and adjust plugs; Clean and adjust points; Clean and inspect battery cables; Check valve clearance; Tighten all bolts and shackles.

"When these operations are performed the date on which they were done is placed under the month it was completed. Anything that needs to be done to the truck between times is taken care of." CARL FITZSIMMONS, Chief.

Perhaps other volunteers and paid departments have worked out their own "maintenance" check lists listing chronologically, all the maintenance jobs that must be attended to. If so, we would be pleased to hear from them.



FALSE ALARMS



Would You Mind Going Up the Ladder, Joe? He's My Dentist!"

Return Trip

A house agent had a farm on his books which was supposed to be haunted, and to prove rumor wrong he decided to engage a man to stay there for one night.

The following day he was up early and went around to see how the man had fared. But the man was not to be found. On the lawn he discovered the remains of a window, sash and shutters completely wrecked, but of the watchman there was no sign.

Four days later the house agent came across him tramping along a country lane three miles away.

"Hello, George!" he cried. "Where have you been all this time?"

The man wiped the prespiration from his brow. "Boss," he replied, "I've been coming back."

Irony

"One night the wail of the French sirens sent me scurrying in my pajamas to a refuge in Paris. I sat in the underground hole nearly an hour, a French millionaire sat beside me, and as we fiddled with our gas masks and talked about the horrors of war the millionaire growled: 'And to think that I subscribed for a monument to Wilbur Wright!"

Clarity

The salesman stopped his car at a farmhouse and asked the way to the nearest hotel. The farmer pointed down to the road.

"You turn left at the schoolhouse," he advised. "Then you go straight ahead till you get to Gad Shor's house. Then you take the left fork in the road and keep on for five miles."

The salesman nodded.

"That's clear enough," he said. "And where does that bring me?"

The farmer smiled.

"Wal," he announced, "that brings you right back to where we're standing now. Right here."

The salesman's eyes popped.

"Right here!" he echoed. "But I don't understand. Why should I come back here?"

The farmer shifted his plug of tobacco.

"To get the rest of the directions," he explained. "If I told you them all at once, you might get confused!"

He Passed Through

A colored soldier was stopped by a sentry one dark night.

"Let me see your pass paper," said the sentry.

"Ain't go no pass paper," said the other.

"Can't pass through here without no pass paper," declared the sentry.

The first soldier rolled his eyes, reached into his coat pocket, drew forth a razor and opened it.

"Boy," he snarled, "I'se got a mother in heaven, a father in hell, and a gal in Blankville. And, believe me, I'se gwine to see one o' dem tonight."

"Smith, what is the formula for water?"

"HIJKLMNO."

"Where did you get such a silly idea?"

Smith: "Well, yesterday you told us it was H to O."

"What! Leave Now? Just When My Living Room's Getting Comfortably Warm!"

In Eureka hose, the rubber lining does not "washboard" or corrugate under fire fighting pressures. The Smooth-Interior Filler-Ply, an exclusive Eureka development, completely fills the valleys in the inner jacket, making the surface of that jacket perfectly smooth and level. The result is a smooth waterway, minimum friction loss, and maximum pressure at the nozzle.

Exclusive features such as this are responsible for Eureka's consistent efficiency on all tough fire-fighting jobs.

• • •

"FOR GREATER PROTECTION TO LIVES AND PROPERTY"

EUREKA

EUREKA FIRE HOSE

Division of **United States Rubber Company**

1230 SIXTH AVENUE • ROCKEFELLER CENTER • NEW YORK 20, N. Y.

Coast Guard Fire Tests

(*Continued from page 96*)

2. From the topside, it was noted that almost immediately after ignition, black smoke started to come from the space between the stack and the stack casing, the open skylights, and the forward starboard and the midship port ventilators. The flow of air was downward in all main ventilators with these two exceptions.

3. Six minutes after start of test, dense black smoke was emitting from the openings on topside with the exception of the forward starboard and midship port ventilators. The flow of air at the open skylights was alternating from inward to outward at about one second intervals.

4. Fifteen minutes after start of test, dense black smoke was emitting from the stack casing, the two forward and midship port main ventilators. Flow of air was downward in remaining three main ventilators and in the open skylights.

5. Thirty-one minutes after start of test, the grilled opening between the Engineer's Storeroom and second deck port side passage was covered. During the following five minutes the aft port and starboard, and the midship starboard main ventilators were covered.

6. Thirty-nine minutes after start of test, the smoke began to decrease in volume and change to gray in color.

7. Forty-one minutes after start of test, the skylight house, including the two small ventilators on top, was covered with a canvas hatch cover. A small amount of gray smoke was emitting from stack casing.

8. Forty-three minutes after start of test, the two forward and the midship port main ventilators were covered. Very small amount of light gray smoke was emitting from the stack casing. Fifty-three minutes after start of test an extremely small amount of light gray and light brown smoke was emitting from the stack casing.

9. Fifty-five minutes after start of test, the main engineroom door was opened and high velocity water fog applied from two 1½ inch all purpose nozzles. Smoke continued to diminish in volume with steam apparent.

10. Sixty-two minutes after start of test, high velocity water fog was applied from one 1½ inch all-purpose nozzle at the starboard passage door on the main deck. Very small amount of white, and light brown smoke emitting.

11. Sixty-four minutes after start of test one nozzle at main door of engineroom was shut off. Smoke continued to diminish in volume and density.

12. Sixty-five minutes after start of test, remaining nozzles were shut off. Extremely small amount of light vapors were emitting.

13. Seventy minutes after start of test, covers were removed from all openings.

14. Seventy-five minutes after start of test a fire party entered engineroom by way of shaft tunnel. Fire was found to have been extinguished and very little smoke present. Fire party was able to proceed in an upright position to any point at the floor level without physical discomfort.

15. Seventy-eight minutes after start of test, no smoke or vapors were emitting. During the later half of this test, considerable smoke was being given off

WOULD YOU HAVE YOUR TOOTH PULLED BY A BLACKSMITH?

In the old days you *might* have gone to a blacksmith with a toothache. After all, he did have the pliers.

Today we ask more of a dentist. We demand that he be a specialist.

So it is with fire extinguishers. Certain types work better on certain fires. Paper and rubbish fires, for example, require an entirely different extinguisher than electrical or oil fires.

So—when you're buying fire extinguishers, buy from a firm that manufactures a complete line and can specify the *right* extinguisher for every fire hazard. Such a firm is General Detroit, specialist in "fire protectioneering" for more than 40 years.

15 lb. Size

ABOVE: **Gl/Dyl** General's famous carbon dioxide extinguisher, is especially suited for fighting oil, gasoline, and electrical fires. Write for details.

FREE. General's new Norman Rockwell calendar featuring Mrs. O'Leary's cow and the Great Chicago Fire. Write for your free copy.

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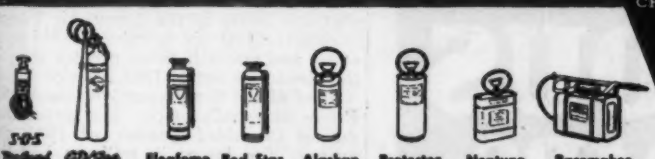

505 Pint 1 Qt. | Gl/Dyl 15 lb. | Floofome 2½ Gal. | Red Star 2½ Gal. | Alaskan 2½ Gal. | Protector 5 Gal. | Neptune 5 Gal. | Pacemaker 5 Gal.

Let General Protectioneers prescribe the *right* extinguisher for your every fire hazard.

Kindly mention FIRE ENGINEERING *when writing advertisers*

Ewing Galloway Photo

Reports come from all over the country telling how Waterous Fire Pumps deliver the volume at four-alarm emergencies; they can be counted on to perform hour after hour.

The Waterous Pump rates high with fire chiefs. Waterous is standard equipment on many leading makes of fire apparatus. Specify it on your next pumper.

Literature on Request

WATEROUS COMPANY • ST. PAUL, MINNESOTA

Also Manufacturers of WATEROUS Fire Hydrants

WATEROUS FIRE PUMPS

by the plywood covering on the aft bulkhead in the Officers' Mess. After fire was extinguished in the engineroom, part of this plywood was removed and a small amount of burning wood located. Fire was extinguished with a few gallons of water from one 1½ inch all-purpose nozzle.

16. Heat indicating lacquer painted on the aft bulkhead in No. 3 hold indicated a temperature of 250° F. was reached down to within 7 feet from the engineroom floor plate level. 500° F. was reached down to within 12 feet. No spot on this bulkhead reached 1000° F. The forward surface (15 inches from bulkhead) of a vertical "I" beam bulkhead stiffener did not reach 250° F. at any point. The stiffener selected was located at the hottest part of the bulkhead.

V Conditions After Test—

1. The engineroom was in practically the same condition as reported after test Fire No. 2 (27 September, 1944) with the following changes and remarks:

a. There was considerable melting of solder on joints of electrical wires.
b. Grease on machinery flowed but did not ignite.
c. No burning of Class A material was apparent.
d. All surfaces in Engineer's Storeroom coated with carbon.

VI Tentative Conclusions—

1. If the carbon dioxide is released promptly after a major fire has started within the engineroom the volume of carbon dioxide delivered by this system is sufficient to extinguish the fire and prevent reignition.

Remarks: It is believed that the governing factor in the success or failure of a carbon dioxide system is dependent upon the degree of heat attained by the metal located in the immediate vicinity of the fuel. If the metal has been allowed to reach a temperature greater than the ignition temperature of the oil, reignition may occur.

Editor's Note: See the March issue for second installment of Commander Layman's tests.

Fire Losses Soar

Fire losses in the United States in 1944 amounted to $423,538,000, the highest figure since 1932, according to estimates of the National Board of Fire Underwriters, made public by W. E. Mallalieu, general manager. The losses were 11 per cent higher than in 1943.

December losses of $48,694,000 were 2 per cent over the $47,716,000 volume for a year before and 44 per cent above losses of $33,847,000 in November. It was the highest month since March, 1932, when the figure was $49,189,000.

Army Air Forces Losses Up!

Figures released by Major Harlan E. Kezer of Washington, D. C. indicate that fire losses in the Army Air Forces during the first six months of 1944 were seven and one-half times greater than in the similar period of 1943. Major Kezer if chief of the fire prevention branch Air Provo Marshal's office. He stated that during the third quarter of 1944, the average fire losses in military installations, excluding those under $100,000 was almost $3,000,000 with 45 per cent of these in the Army Air Forces.

RUBBER or CANVAS

COMBINATION SUIT

NOW AVAILABLE!

Special combination suit with Bunker Pants is Midwestern's Outfit No. 101. Detachable wool linings. Flexible elastic inner sleeve for wrist. Keeps out water, cold and sparks. Equipped with Midwestern Safety Snap, a new exclusive feature. Can be easily and quickly fastened or unfastened—nothing can catch on it. Will not freeze or jam as easily as old type snap. Midwestern garments are favored by the larger municipal departments throughout the country. Write for literature and prices.

THE COAT:

- Adjustable collar strap
- Reinforced collar band for lining
- Lining attached with quick snap buttons
- Corduroy lined collars
- Reinforced, double stitched seams
- Vertical seams in sleeve shoulders
- Inside of fabric, heavily napped cloth
- Two outside pockets
- Wool detachable lining
- 6-inch storm flap

THE PANTS:

- Lining held by snap buttons
- Rubberized fabric belt in lining
- Eight suspender buttons
- Two side and one hip pocket
- Safety snap on belt
- Reinforced adjustable belt
- Special Vanitex fabrics
- Wide protecting flap
- Reinforced by rivets

See your Midwestern Mfg. Co. representative for catalog and prices, or write the factory.

Regular Firemen's Boots Now Available!

Fireman's boots ¾ length, reinforced instep, felt linings. Do not confuse these boots with reclaimed boots which have been offered firemen for past 2 years. These are regular fireman's boots made of the new synthetic rubber. Write.

Midwestern Mfg. Co.

Mackinaw, Illinois

WHEN THE ALARM SOUNDS

Send PROVED PROTECTION ALONG WITH YOUR MEN

THE M·S·A

All-Service GAS MASK

(U. S. BUREAU OF MINES APPROVED)

You are best equipped to meet gas and smoke conditions encountered by your men when you have the famous M.S.A. All-Service Mask to rely upon! Easily put on and quickly adjusted, comfortable to wear, and efficient in protection against smoke and all gases, including carbon monoxide, the Model "S" All-Service Gas Mask features the *All-Vision* Facepiece (pictured in illustration with Speaking Diaphragm) for maximum vision; automatic timer; lightweight harness, and other design advantages—detailed in Bulletin EA-8, sent promptly on request.

MINE SAFETY APPLIANCES COMPANY

BRADDOCK, THOMAS AND MEADE STREETS

PITTSBURGH 8, PA.

What's Burning

THE following list includes fires of 50,000 loss and over in the United States and Canada, for the month of January, 1945. These figures, compiled from the telegraphic reports, are based on estimates made at the time and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent losses in thousands of dollars.

Month Ending January 31:	Losses in Thousands of Dollars
Toronto, Ont.—Milne Studios, Honey Dew Restaurant, Calhoun Hats, Olivia Tea Room, Burnil Bookshop and Sip and Bite Restaurant damaged	100
Sydney, N. S.—Methodist Church used by Federal Health authorities for storage destroyed	80
Sorel, Que.—Shell plant of Sorel Industries, Ltd., destroyed	170
Quebec City, Que.—De L'Auto Garage, destroyed	80
Muncie, Ind.—Plant No. 1 of Ball Brothers Co. damaged	425
Gary, Ind.—Main shop of American Bridge Co.'s steel fabricating plant damaged	170
Chicago, Ill.—Lawrence Bowl bowling alleys and recreation parlor destroyed	200
Fort Devens, Mass.—Service Club No. 2 housing cafeteria, library, music room and dance auditorium, destroyed	80
Malaga, N. J.—Main bldg. of Spectro-Chrome Institute destroyed	200
Lima, Ohio—Mailing room and business office of "Lima News" destroyed	50
Anderson Dam, Ida.—Boiler room, compressor house machinery destroyed	80
Blackville, S. C.—Stables of Simon Browns Sons destroyed; warehouse housing firm's stock of groceries and farm supplies damaged	50
Anchorage, Alaska—Fairbanks Flour Mill destroyed	50
Carlinville, Ill.—Burgdorff Bldg., housing abstract office and the Tri-City Grocery Co. destroyed; Hair-Style Beauty Shop, Red and White Grocery Store, the Anderson Bank Bldg., St. George Hotel and Carlinville Glove Co. damaged	50
South Bend, Ind.—Belleville Lumber & Supply Co. and Haff Millwork & Bldg. Material Co. damaged	50
Minneapolis, Minn.—Warehouse bldg. damaged	80
Mansfield, Ohio—Wonder Bar Night Club destroyed	70
Quebec, Que.—Four bldgs. occupied by automobile show rooms for Universal Automobile, Ltd., roller skating rink, restaurant and apartment damaged	80
Bay City, Mich.—Westown Theatre damaged; adj. Peoples Savings & Commercial Bank branch, and clothing store, damaged	80
Grayling, Mich.—Rustic warming shelter and toboggan take-off bldg., Grayling winter sports park, two miles west, destroyed	50
Coshocton, Ohio—The Maxfield, apt. bldg. destroyed	50
Newport, R. I.—Clubhouse at Newport Casino destroyed	50
Memphis, Tenn.—Jolly Cab Co.'s downtown garage destroyed	80
Philadelphia, Pa.—Temple Baptist Church destroyed	80
Rock Island, Que.—Church of Our Lady of Mercy destroyed	50
West Haven, Conn.—Factory of A. F. Holden Co., makers of furnaces and chemicals destroyed	250
Springfield, Ill.—Gietl Bros. garage destroyed	50
Muskegon, Mich.—Eight business establishments, including Hub Hotel, destroyed	450
Bemidji, Minn.—Municipal bldg., records of naval recruiting station and Farm Security Administration; also municipal liquor store, destroyed	60
Wadesboro, N. C.—Downtown business block destroyed	200
Lima, Ohio—Milner Hotel and three other business houses destroyed	425
Connellsville, Pa.—Barn, dairy house and corn crib on farm of Edgar J. Kaufmann, Bear Run, ten miles east, destroyed	50
Boothbay Harbor, Me.—Six bldgs. destroyed	225

A Kidde portable extinguisher quickly smothers fire in a motor-generator set, without danger of shock or damage to insulation.

KIDDE EQUIPMENT HITS THE HOT SPOTS to put tough fires out!

Even a small blaze in electrical equipment — or flammable liquids — may quickly flare into a serious fire...unless the *right* extinguisher gets to work fast.

Ordinary water-type extinguishers cannot stop these tough Class C and Class B fires. But a Kidde portable — approved by both Underwriters' and Factory Mutual Laboratories — chokes them off quickly and safely.

If a blaze breaks out in *electrical equipment*, non-conducting carbon dioxide keeps the operator safe from the danger of shock, while it swirls around corners and penetrates crevices to extinguish every flicker of flame. Dry and inert, the gas does not damage the equipment or rot the insulation.

When *liquids* catch fire, a cloud of carbon dioxide gas from the Kidde nozzle forms a thick blanket that smothers the flames... then evaporates to leave valuable materials uncontaminated.

Safe, clean, fast — Kidde extinguishing equipment is ready to take on the job of guarding *every* tough-fire area in your plant. Check the accompanying list of hazardous locations — then ask a Kidde representative to show you how best to protect them.

KIDDE KILLS TOUGH FIRES

MG Sets
Process Rooms
Ovens
Spreaders
Motors
Storage Rooms
Mixers
Coaters
Transformers
Dip Tanks
Agitators
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Control Panels

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You can speed up fire fighting by a MOTORCYCLE Patrol

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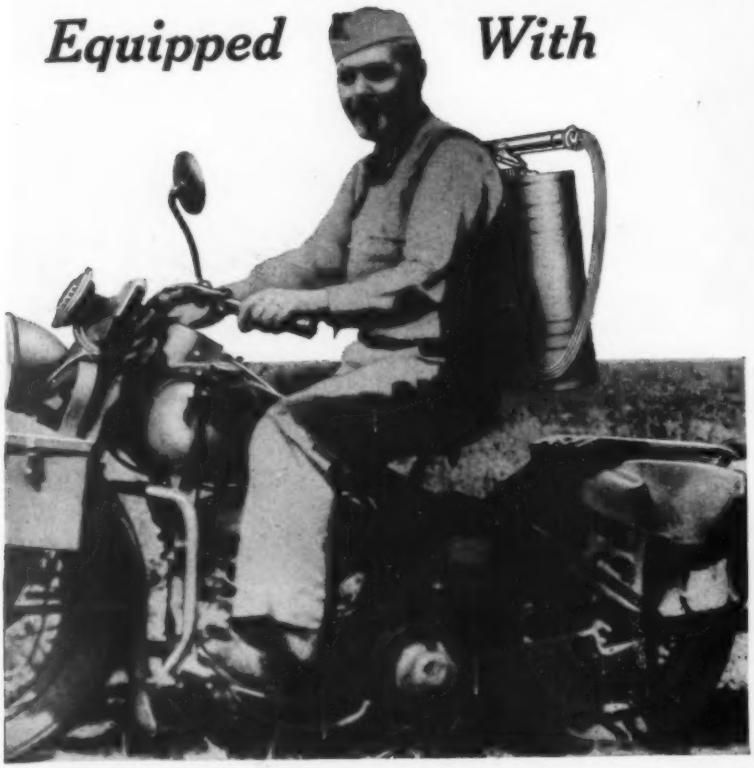

INDIAN FIRE PUMPS

Pressure stream from an *INDIAN FIRE PUMP* drives hard into every nook and cranny — smashes fire completely.

A man with an *INDIAN FIRE PUMP* and a motorcycle is equipped to get to the trouble fast and put the blaze out in a hurry! Strapped on the back, the big 5-gal. rust-proof tank leaves the arms free. This is just another way these hard hitting, clear water extinguishers knock out grass, rubbish, building and Class A fires before they spread.

Now is the time to supply your department with famous *INDIAN FIRE PUMPS*—the portable, speedy fire fighters which have won the praise of all who use them. Only clear water used.

D. B. SMITH & CO.
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Oregon

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2700 4th Ave. So.
Seattle, Wash.

FOR INSIDE AND OUTSIDE FIRES USE
INDIAN
Clear Water
FIRE PUMPS

Chicago, Ill. — Ainslie garage destroyed; also 60 passenger automobiles..... 100
Indianapolis, Ind. — Brook-Long Motor Truck Terminal damaged..... 50
Youngstown, Ohio — Central Tower Bldg. damaged; also Corss drug store and Federal Furs, Inc..... 50
Chicago, Ill. — Chicago Beverage Co. damaged 50
Guthrie, Ky.—Lyric Theatre destroyed; adj. Elkton Bank & Trust Co. damaged..... 50
Clyde, N. Y.—Vinegar, sauerkraut and alcohol plant of Charles A. Noble Co. damaged 200
Fremont, Ohio—Fremont Rubber Co., two carloads of finished tire rubber and 500,000 pounds of raw material destroyed.... 425
Vickery, Tex.—First Baptist Church de-P. Hood & Sons; business apat. block stroyed 50
Newport, Vt.—Processed-milk plant of H. P. Hood & Sons, business apt. block occupied by Youngman's Service Station, Diamond Top Shop and Newport Trucking Co. and dwelling destroyed..... 80
Superior, Wis.—Store owned by the Lee Brothers Co., destroyed 60
Flint, Mich. — Robinson Clothing Co. destroyed 125
Lynbrook, N. Y.—Sundale Poultry Farm, Clinque Fruit and Vegetable Store and newsstand destroyed 50
Dayton, Wash. — Thirteenth Mill Stream dairy farm destroyed 50
Peoria, Ill.—Farrow Chickeries destroyed.. 50
Dysart, Ia. — Office bldg. and yards of Farmers Lumber Co. destroyed..... 50
Houlton, Me.—Potato house destroyed.... 50
Lebanon, N. H.—Woolworth block, housing five-and-ten-cent store, vacant offices and a closed movie theatre destroyed..... 75
Sampson, N. Y.—Service bldg. at U. S. Naval Training Center, housing cafeteria, stores, bowling alleys, recreation equipment and library, destroyed..... 250
Syracuse, N. Y.—Hiawatha Bldg. occupied by Waters Equip. Co., East Genesee Grill, garage, A. M. Little Wholesale Electrical Supply Co., D. K. Post & Co., electrical supplies; Martin Rose, gears; Coye Art Shop, C. A. Houde art studio, Hugh Campbell, jeweler, and Fred G. Spence, printing, destroyed..... 50
Philadelphia, Pa.—Bldg. housing sections of A. M. Townson & Co., Inc., textile dyers and finishers, and Vigilant Mills Co., Inc., also textiles..... 800
Norwalk, Conn. — Shorehaven Golf Clubhouse destroyed 80
Chicago, Ill.—General Clark Hotel, Hyman's Clothing Store and Sammy's Cigar Store destroyed 80
Meridian, Miss. — Clarkdale School, eight miles south on Highway 45, destroyed .. 50
Middleburg, N. Y.—Grange League Federation Store and warehouse destroyed.... 60
Statesville, N. C. — New Front Street Church destroyed 50
Commerce, Tex. — Municipal hangar and five planes at Commerce Municipal Airport destroyed 50
Terminal Island, Cal.—Bldg. of California Shipbuilding Corp. destroyed..... 80
Madison, Fla.—Warehouse of Van H. Priest Co. destroyed 60
Chicago, Ill.—Bldg. occupied by Machinery Products Corp., Chicago Porcelain Enameling Co. and Monarch Mfg. Co. destroyed 50
Chicago, Ill.—Doran Bldg. destroyed. Concerns affected were Vitrolite Construction-Vitrolite Products Co., Block Mfd. Co., Dearborn Scientific Co. and Gold Seal Mfg. Co. 80
Bay Port, Mich.—Bay Port Fish Co. and Gillingham Fish Co. on Saginaw Bay pier destroyed 250
Long Branch, N. J.—Blue Room, ocean-front cafe-restaurant destroyed destroyed 60
Rochester, N. Y.—Three summer homes, Grand View Beach destroyed; one damaged 50
Spartanburg, S. C.—Five stores on Spartanburg's principal thoroughfare..... 600
Baraboo, Wis. — Badger Ordnance Plant and garage and repair shop of Groves Construction Co. destroyed 50
Seattle, Wash. — Ballard Marily Railway damaged 100
Corinth, Miss.—McRae Hospital damaged.. 80
Ashville, N. C.—J. J. Newberry dept. store destroyed; adj. M. V. Moore and Pollock's stores damaged 100
Orleans, Vt.—Hazen E. Converse Co. furniture store and Colton general store.... 80
Hartland, N. B.—Potato house and 10,000 barrels of potatoes destroyed..... 50
Lennoxville, Que.—Granary of Co-operative Farmers Assn. of Sherbrooke, damaged.. 50
Mt. Clemens, Mich.—Half a business block and Van-Ross and John R. Murphy Hotels, damaged 200

Wartime Life Guards
WITH A PEACEFUL FUTURE

SCOTT *Air-Pak* EQUIPMENT

★ Here, in principle, is the forerunner of safety equipment which in the near future will dependably serve many industries. Scott *Air-Pak* (Portable Oxygen) outfits are today serving our fighters at extreme altitudes—where oxygen failure means death in a matter of minutes. These fighting men's lives depend upon the oxygen Scott equipment feeds them.

Soon industry will benefit from experience gained by Scott engineers in designing and building such life-guarding apparatus. Yes, soon portable breathing equipment—embodying Scott reliability—will be available for peace-time protection wherever the need for *complete* respiratory protection is imperative.

Scott

AVIATION CORPORATION

Established 1932

215 ERIE STREET, LANCASTER, N. Y., U. S. A.

FOR TOMORROW'S SAFETY

Deadly coal gas will hold no terrors for the miner protected by the Scott Air-Pak.

Firemen protected by Scott Air-Pak will work fast, efficiently despite smoke and fumes.

Maintenance of gas storage tanks will be easier and more economical with workmen protected by the Scott Air-Pak.

ACME the DEPENDABLE FIREMEN'S GAS MASK

BUY MORE BONDS AND KEEP THEM

When unknown gases or fumes are prevalent in burning buildings and firemen are required to enter such areas, it is extremely important that the gas masks they wear will provide them with All-Purpose protection.

The Acme Type FD FULL VISION All-Purpose Gas Mask has proven its dependability many times in severe and difficult fire situations. Acme masks have the exclusive Wide, Flat, Safety Glass Lenses which provide FULL VISION which is NOT distorted.

The Acme Canister protects against Carbon Monoxide, Organic Vapors, Acid Gases, Ammonia, Toxic Smokes, Fumes, and Smoke Suffocation.

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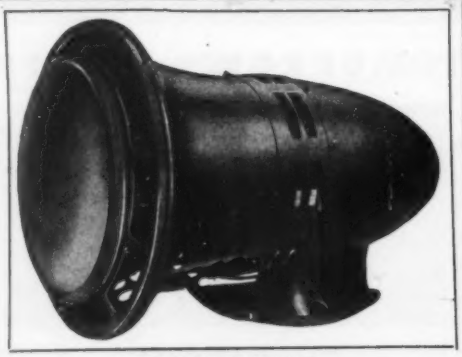
ACME PROTECTION EQUIPMENT COMPANY, INC.
Manufacturers
3616 LIBERTY AVENUE Cable Address ACMEPROCO PITTSBURGH, PA U.S.A.

SIRENO

PRECISION MADE ELECTRIC SIRENS

THE UTMOST IN DEPENDABILITY AND LONG LIFE

THE SIRENO CO., Inc.
214 WILLIAM STREET
NEW YORK CITY



SIRENO WITH 7" RED FLASHING LIGHT

Rice Lake, Wis.—Bldg. occupied by Schultz Bros. Co., offices of Rice Lake Furnishings Co., and Gilbert Gannon law offices, destroyed 60

Vincent, Ala.—Vincent Consolidated School destroyed 125

Presque Isle, Me.—Northern Natl. Bank Bldg., Northern Maine community near Canadian border, owned by Northern Natl. Bank, occupied by the bank, State Theatre, Radio Station WAGN, American Legion Hall, chain apparel store, S. Friedman Clothing Co., Army and Navy store and Red Cross rooms, destroyed.. 350

Medina, Ohio—Furniture store of D. S. Longacre & Son destroyed..... 50

Erie, Pa.—Forty-two delivery trucks of Sanitary Farms Dairy destroyed..... 80

Northbay, Ont.—Business block damaged.. 60

Lowell, Mich.—High School, Kent County, destroyed 125

Pittsburgh, Pa.—A. Mamaux & Son Co., manufacturers of canvas equipment destroyed 60

Ruffsdale, Pa.—Ruffsdale Distilling Co. main bldg. destroyed..... 170

Sudbury, Ont.—Wolfe's News Stand, Levi's Fur Store, United Shoe Store, Lansi's Barber Shop and Kelly's Radio Store damaged 80

Quebec, Que.—Imperial Laundry damaged 80

Biddeford, Me.—Central Theatre Building, occupied by barber shop, jewelry store and chiropodist shop destroyed..... 80

Norfolk, Conn.—Colonial dwelling of Major James Lawrence destroyed..... 50

Bangor, Me.—Vacant Waterman block of Kurson & Epstein, two other business blocks and several buildings destroyed... 170

Baltimore, Md.—Property and lumber of Washington Lumber Co. plant destroyed 50

Port Henry, N. Y.—Knights of Columbus block and the Hayes block destroyed.... 170

Homer, N. Y.—Homer Academy damaged 80

Philadelphia, Pa.—Three bldgs. of Henry Schmidt & Bros., Inc., paper box manufacturers destroyed; William Esterbrook Sheet Metal Works, Dan Malloy Co., Goodway Printing Co. and St. George's Church damaged 425

Susquehanna, Pa.—City National Bank transcript and ledger bldgs. occupied by Knights of Pythias, Knights of Columbus and American Legion destroyed..... 125

Cannington, Ont.—Cannington Cereal Industries, Ltd., damaged..... 60

Chatham, Ont.—Grain elevator of Ian Maynard damaged 60

Toronto, Ont.—Chalmers Presbyterian Church destroyed 100

Hull, Que.—Business and apt. block damaged 80

Gainesville, Fla.—Hatters and Johnson Gift Shop destroyed; Canova Drug Co. damaged 50

Atlantic City, N. J.—Lyric Theatre damaged 50

Holtville, Ala.—Formby Hall at Holtville High School, housing quick-freeze locker plant, hatchery, cannery, dehydration plant, and printing office destroyed..... 80

Chicago, Ill.—Armour & Co. truck garage destroyed 50

Hammond, Ind.—Restaurant of Phil Smidt destroyed 100

Atlantic City, N. J.—Steelman Laundry bldg. destroyed..... 125

Syracuse, N. Y.—Seitz Oil Products Refining Co. destroyed..... 70

Olyphant, Pa.—Granada Theatre destroyed; apartments, Turko's Sweet Shop, Samuel Goldberg's jewelry shop and Sam Needles shoe shop in same bldg., damaged. Adj. Samuel Pinkus' furniture store damaged.. 80

Buffalo, N. Y.—Bethany Evangelical Lutheran Church damaged..... 60

Montreal, Que.—Marianapolis College destroyed 200

Atlanta, Ark.—Plant of Walker Electric Co. destroyed 200

North Attleboro, Mass.—North Attleboro Chronicle Bldg., housing Chronicle newspaper, also apartments, destroyed..... 170

* * *

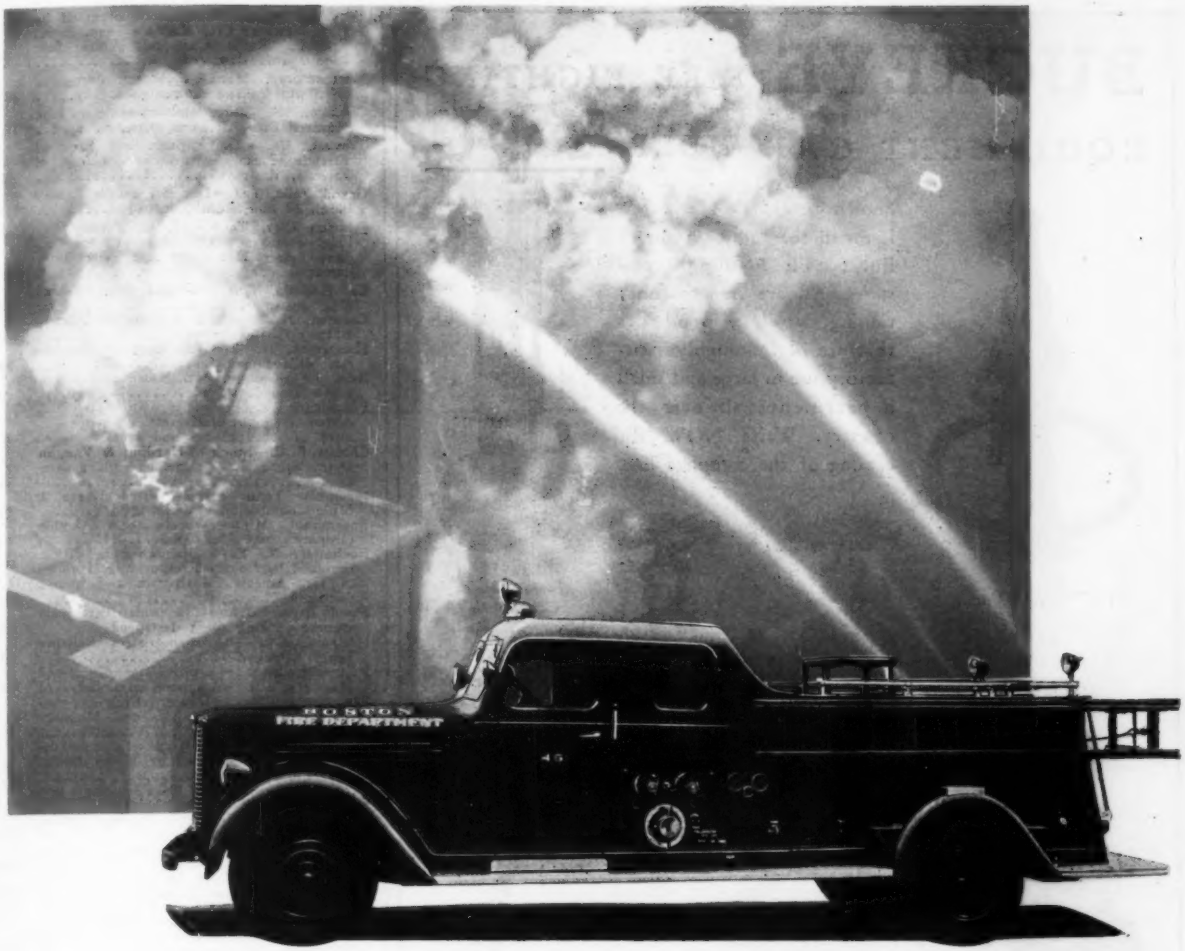
Because of space limitations in the January issue, we were forced to omit these December, 1944, fire losses:

Ukiah, Cal.—Chris Norgard block occupied by Ukiah Garage, Week's Retreading Shop and Ukiah Auto Body Shop, destroyed 125

Cairo, Ill.—J. C. Penney Dry Goods Co. destroyed 60

South Bend, Ind.—Norwalk Truck Lines Terminal damaged 250

Shreveport, La.—Treating unit of Lincoln Creosoting Co., Inc., outside Bossier city limits destroyed 60



TORQUE IS NEEDED TO MAKE THE GRADE

Torque is the force which takes your fire engine up and over the grades through the mud and snow of winter to the scene of fire.

Specify the type and size of engine in your fire apparatus which has the proper torque to do the work expected; also consider the matter of cubic inch displacement and high horsepower output at low engine speed in your next specification.

The Pirsch canopy type 1,000 gallon pumper shown above has been delivered to the city of Boston, Mass. Repeat order for an additional 1,000 gallon Pirsch pumping engine has been placed by Boston.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100' AERIAL LADDER"

BUCKEYE FIRE FIGHTING EQUIPMENT CAN HELP YOU

Shown here are only a few items in the *complete* line of Buckeye Fire Fighting Accessories. All are smooth-functioning, *quality* products that are in thoroughly satisfactory use in large and small departments all over the country. Write NOW for catalog of the complete line.

Fig. 900
2½" Shut-off Nozzle

Fig. 935
Junior Chiefs' Car Whistle

Fig. 925
Siamese Gates

Fig. 930
Junior Type Roto-Ray

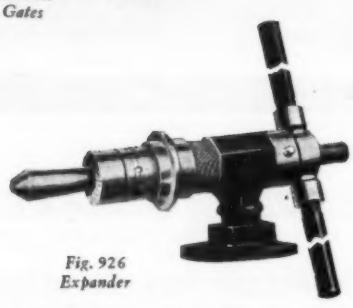


Fig. 926
Expander

BUCKEYE IRON & BRASS WORKS

Dayton, Ohio

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Price $2.25

BOOK DEPT.

CASE-SHEPPERD-MANN PUBLISHING CORP.

24 WEST 40th STREET, NEW YORK 18, N. Y.

Franklin, Mass.—Rubin block occupied by J. J. Newbery Co., Martin's Dept. Store, Franklin Radio Co. and White Star Liquor cafe damaged..... 80

Northampton, Mass.—Dickinson dormitory on Smith College campus damaged..... 225

Chicago, Ill.—Bldg. and contents of the Maxwell Bros. Co., box mfrs., damaged.. 170

Trevose, Pa. — Dairy plant and barn of Friends Farm, owned by Society of Friends, destroyed..... 80

Grand Falls, Tex.—Imperial Public School bldg., 12 miles south, destroyed..... 125

Johnson City, Tenn. — J. C. Penney Co. bldg. destroyed; adj. Smythe Elec. Co., Jane Setzer Hat Shop and Sells Bldg. damaged 150

La Malbaie, Que. — Marist Bros. school bldg. destroyed 80

Camden, N. J.—Plant of Camden Storage Battery Co. destroyed..... 60

Henderson, N. C.—Warehouse of Henderson Mills damaged..... 50

Erie, Pa.—Garage, apt. house and silversmith shop destroyed 60

Providence, R. I.—F. H. Buffington Co. destroyed; plant of Everett & Barron Co., mfrs. of shoe polishes and dyes, damaged 80

Chester, S. C.—Stock of **Harding & Vaughn** Dept. Store badly damaged; bldg. damaged 50

Memphis, Tenn.—Owens Bros. Horse & Mule Commission Co. destroyed..... 80

Rosemount, Minn.—Warehouse of Gopher Ordnance plant destroyed..... 80

Rochester, N. Y. — Fitzhugh-Broad Bldg. occupied by Colony Restaurant and offices of Dr. Adrian P. Drumm and others, damaged 50

Hood River, Ore. — Duckwall Bros. cold storage packing plant destroyed..... 50

Norwalk, Cal. — Three barns of Reliance Dairy damaged 50

Knoxville, Tenn. — Lane Drug Store and Mangel's, a ladies' apparel firm, damaged 125

San Antonio, Tex.—Navarro Club and restaurant destroyed; Lord's and Mangel's adj. bldgs., damaged..... 50

Charleston, W. Va.—Milliron garage destroyed; bldg. occupied by Valley Equip. Co. damaged 60

Toronto, Ont.—Factory bldg. housing Sherrat Toy Co., Strong Printing Plates, Crown Upholstery and Helena Rubenstein, damaged 60

Murray Bay, Que.—College and resident of the Marist Bros. damaged..... 80

Pasadena, Cal.—Welch Overall & Uniform Cleaning Co. plant damaged..... 170

Des Moines, Ia.—Bldg. housing warehouse of New Monarch Machine & Stamp Co. plant, and maintenance plant of Phillips Petroleum Co. destroyed..... 300

St. Paul, Minn.—Rose Bros. Lumber & Supply Co. destroyed..... 125

New Haven, Conn.—Five central business houses including store of Natl. Peanut Co., Loft Candy store, damaged..... 125

Evergreen, Ala.—Evergreen Hotel destroyed 125

Preston, Ida.—East Side school destroyed.. 50

Douglas, Ariz.—Douglas Drug Co. damaged 125

Kenora, Ont.—Johnson's Taxi Bldg., Donner's Furniture Store and Spragges Furnishing Store damaged..... 60

Chicago, Ill. — Plant of Ideal Wrapping Products Co. destroyed..... 170

Page, Va.—Page-Pocahontas Coal Co. destroyed 80

Among the Auxiliary Firemen

The Cleveland East Ohio Gas Company disaster demonstrated the wisdom of maintaining a blacklog of well-trained citizen protection forces. At that holocaust some 2,700 civilian protection workers, including auxiliary firemen and first-aiders, went to work with noticeable absence of confusion.

* * *

Toledo, O.: Reviewing the history of the organization and training of auxiliary firemen in Toledo, Inspector Earl Walterscheid of the Toledo Fire Prevention Bureau, states that a total of 700 auxiliary firemen were trained for service when civilian protection was first organized. The number has shrunk, but members still respond to multiple alarms to aid the city's regular firemen, whose ranks have dropped from 438 to only 350.

Firemen must expect the unexpected—

and here's an idea that will help you meet it!

You never know what new condition, new hazard, you may meet—what special apparatus you may need.

As experienced firemen you know this is true.

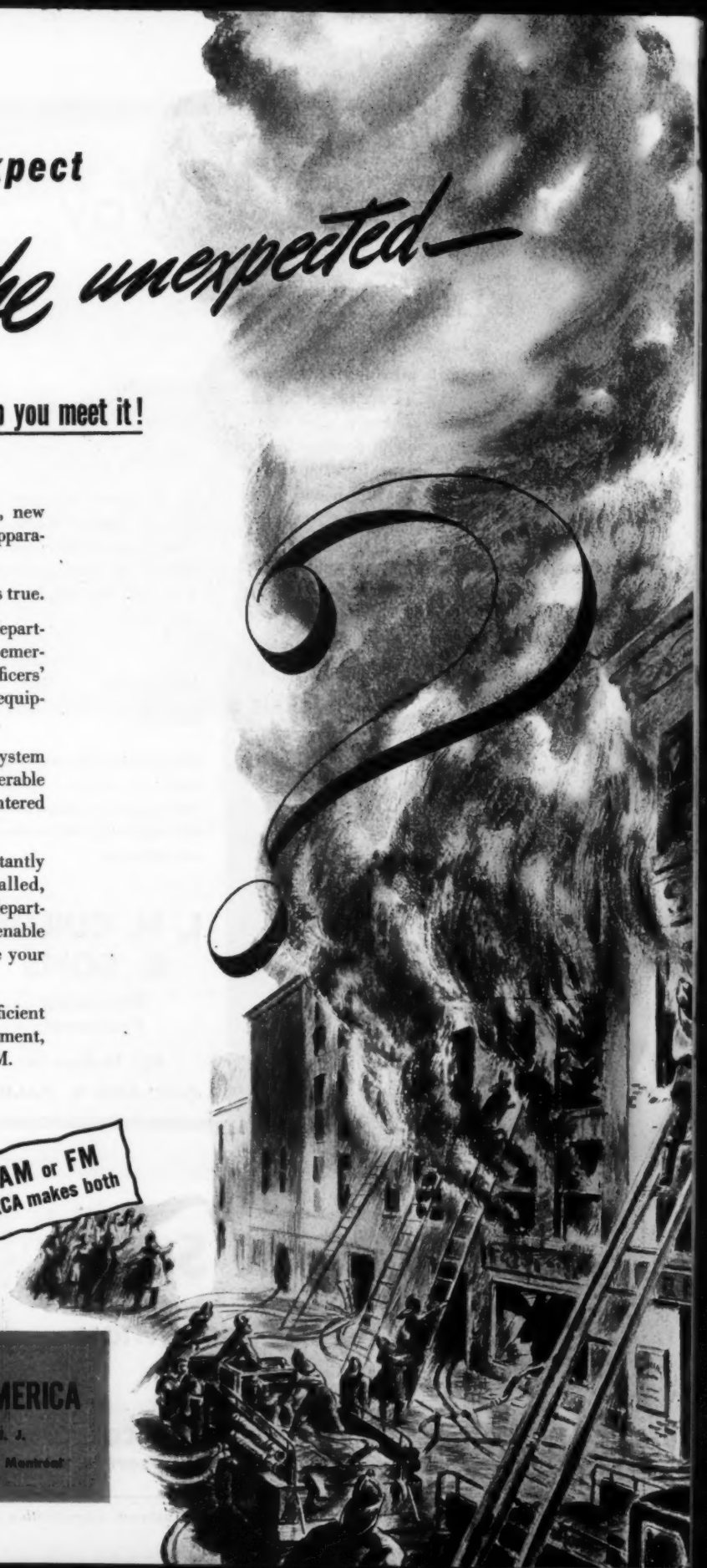
That is one reason why so many fire departments want radio, like police radio, for emergency communication between their fire officers' cars, pumpers, trucks and other mobile equipment, and fire stations and headquarters.

A well-planned RCA 2-Way Radio System can be of immeasurable value in innumerable situations and problems constantly encountered in fire department work.

Fire officers and apparatus can be instantly reached, summoned, dispatched, recalled, diverted. With such equipment your department can give better, faster service—enable your men and machines to do more, give your community better protection.

Let RCA engineers help you plan an efficient RCA 2-Way Radio System for your department, now, for postwar installation—AM or FM.

BUY MORE WAR BONDS



RCA

RADIO CORPORATION OF AMERICA

RCA VICTOR DIVISION • CAMDEN, N. J.

In Canada, RCA VICTOR COMPANY LIMITED, Montreal

Here's the

Quicker, Safer Way to Put Out Fires

The Universal Nozzle provides the *quicker* way to put out fires because the hoseman can change the type of stream in an instant for any sudden change in fire conditions. The Universal Nozzle provides the *safer* way to put out fires because it can put a 130 degree water curtain between the hoseman and the flames . . . also in an instant . . . while retaining a solid stream, if desired. The Universal is the versatile nozzle, proved by seven years of actual use under all conceivable conditions.

Satisfied Users Include

The U. S. Army and Navy at their air stations, the U. S. Coast Guard on its vessels, in addition to industries and municipal fire departments everywhere.

Solid Stream • Fog • Water Curtain or Any Combination with

The UNIVERSAL NOZZLE

Write for Details

Inquiries about this remarkable nozzle are invited. Dealers, industries, and fire departments will be sent full details without any obligation.

L. N. CURTIS & SONS

Emergency Equipment

451 Hudson St.

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For Any

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Send your order to

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24 WEST 40TH STREET NEW YORK 18, N. Y.

Classified Advertisements

WANTED

Fire Equipment Supply Companies, to sell Morning Pride Protected Rubber Firecoats, with Wing Sleeves, Chest Protector, Face Protecting Collar, Wool Wristlets, Double Shoulders, No Dirt Pockets. Also Firepants and Mitts. Write Morning Pride Mfg. Co., 1986 Home Ave., Dayton 7, Ohio.

CHIMNEY POWDER

No need to send men on the roof for chimney fires. Has-Mor Soot Destroyer not only puts the fire out, it continues to work until it cleans the chimney, making it unnecessary to go back to another chimney fire. Put up in handy packages. Agents wanted. Harry S. Morgan, 52 Broad St., Johnson City, N. Y.

FOR SALE
FIRE DEPARTMENT SUPPLIES

Portable Pumps, Floodlight Generators and systems. Double Jacket Fire Hose, Booster Hose, Coats, Helmets, Masks, Fog Nozzles, Sirens, complete line of Fire Department supplies. Box 30, c/o FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

AGENTS WANTED

To sell high grade line of fire protection equipment and fire department supplies. Good proposition. Write—Schwartz Bros., Inc., 731-733 Filbert St., Philadelphia, 6, Pa.

"Established over 37 years."

FIRE EQUIPMENT COMPANIES

We are looking for several firms in the Mississippi Valley States who have men personally contacting Fire Departments. Our line is highly specialized. Many Fire Departments are already users. Has been on the market for years and there is a constant demand for our equipment. Write Box 5, c/o FIRE ENGINEERING, 24 W. 40th St., New York 18, N. Y.

FOR SALE

1931 Model LaFrance 500 G.P.M. rotary pump with 80 gallon booster tank and standard equipment. Now in use. Address replies to Box #10, c/o FIRE ENGINEERING, 24 W. 40th St., New York 18, N. Y.

FOR SALE

One American LaFrance City Service Truck, Type 14.

If interested write for detailed information and photograph. Truck can be seen at Herkimer Fire Department.

Fire Chief Harry A. Vincent,
Herkimer, N. Y.

Coronor's Finding on Circus Fire

Criminal responsibility for the disastrous circus fire at Hartford, Conn., on July 6, last year, which took the lives of 168 persons and injured 862 others, has been placed on two officials and five employes of the Ringling Brothers and Barnum & Bailey Combined Shows, Inc., in a finding issued on January 11 by Coroner Frank E. Healy of Hartford County, Connecticut.

Protected by ONE

Cardox Fire Extinguishing System

The five oil processing and storage rooms illustrated here . . . plus four others and a long pipe tunnel that could not be photographed . . . represent a major fire hazard in one of America's large war plants. All nine rooms and the pipe tunnel . . . 941,140 cubic feet . . . are guarded by *a single* engineered Cardox Fire Extinguishing System. 12 tons of liquid Cardox CO_2 provide total flooding of any of these rooms with inert carbon dioxide and CO_2 snow as soon as fire strikes . . . with substantial reserve for new emergencies.

Here is only one of hundreds of examples of how engineered Cardox Fire Extinguishing Systems utilize fast-acting, non-damaging, inexpensive carbon dioxide to provide enhanced extinguishing performance in protecting *large* and *small* hazards.

The enhanced extinguishing performance of carbon dioxide, as controlled and applied in Cardox Systems, is due to these four basic factors: (1) It has uniform extinguishing characteristics regardless of plant or atmospheric temperatures; (2) It is available in ample quantity for application at high rate and for total flooding (when necessary) of large areas; (3) It provides high CO_2 "snow" yield for increased cooling effect; (4) It achieves effective projection through relatively great distances—even outdoors.

The hazards in your plant may not be as *large* as those shown here, but the kind of extinguishing performance that has caused Cardox Systems to be specified for guarding hazards such as these has a place in your fire protection plans. Cardox engineers offer you practical cooperation. Write for details and Bulletin 1925.

●

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BELL BUILDING • CHICAGO 1, ILLINOIS

New York • Boston • Washington
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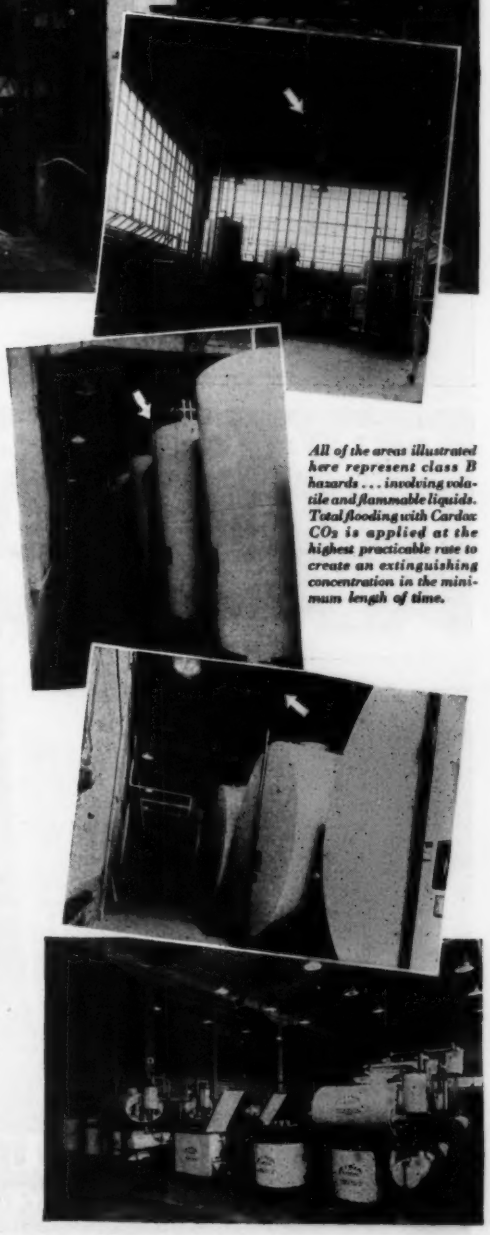


All of the areas illustrated here represent class B hazards . . . involving volatile and flammable liquids. Total flooding with Cardox CO_2 is applied at the highest practicable rate to create an extinguishing concentration in the minimum length of time.

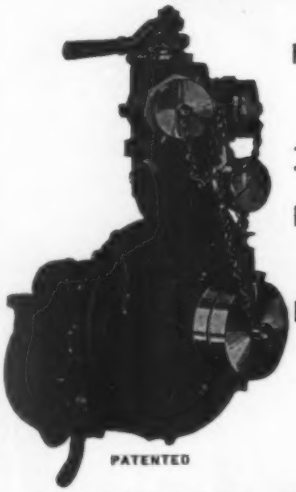
CARDOX
CO_2 FIRE EXTINGUISHING SYSTEMS

Barton Front Mounted

AMERICAN-MARSH PUMPS

Barton-American Midship

FIRE APPARATUS
CENTRIFUGAL PUMPS



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FRONT MOUNTED FOR EASE OF OPERATION

AUTOMATIC VACUUM PRIMER

HIGH PRESSURE AT LOW ENGINE SPEED

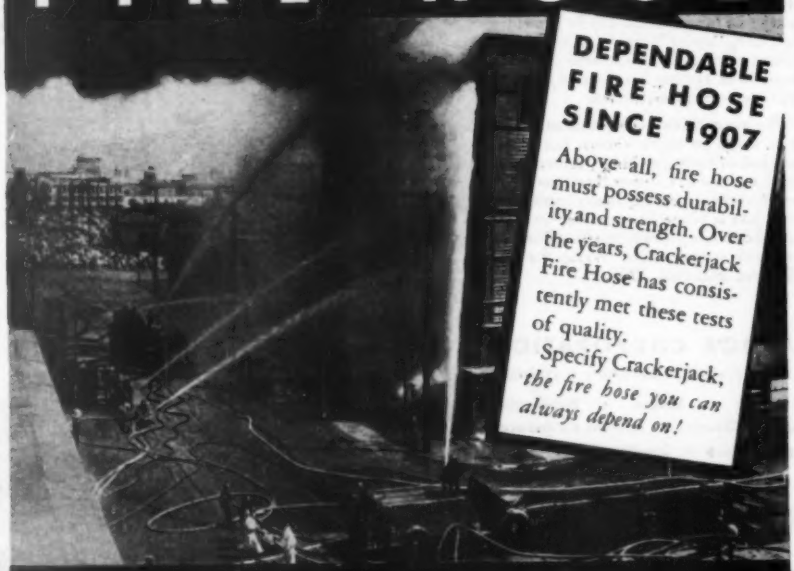
BOOSTER TANK OPERATION WITH TRUCK IN MOTION

Offered in capacities from 250 to 600 G.P.M.

AMERICAN-MARSH PUMPS, INC.

Battle Creek, Michigan, U. S. A.

CRACKERJACK
FIRE HOSE



DEPENDABLE FIRE HOSE SINCE 1907

Above all, fire hose must possess durability and strength. Over the years, Crackerjack Fire Hose has consistently met these tests of quality.

Specify Crackerjack, *the fire hose you can always depend on!*

The AMERICAN RUBBER Mfg. Co.

Park Avenue and Watts Street • Oakland, Calif.

Coroner Healy in his statement places the blame on James A. Haley, Vice-President and Director of the circus corporation; George W. Smith, General Manager; Leonard S. Aylesworth, Boss Canvasman; Edward R. Versteeg, Chief Electrician; David W. Blanchard, Supt. of Rolling Stock and William Caley and Samuel Clark, Seatmen.

The Coroner said the seven were "guilty of such wanton or reckless conduct either of commission, or of omission where there is a duty to act, which makes them criminally liable for the deaths."

Negligence Charged

The finding also states that "I find no legal duty imposed on the part of the Fire Department, Police Department or the Building Department, of the City of Hartford, to make an official inspection of circuses under canvas, exhibited in the City of Hartford."

Haley, Smith, Aylesworth, Versteeg and Blanchard, arrested soon after the fire of July 6, 1944, are at liberty under bonds. State Attorney Hugh M. Alcorn, Jr., to which Coroner Healy submitted his finding, indicated that he would study the cases of Caley and Clark to determine what action should be taken.

The finding further asserts the two seatmen "left their places under the bleachers, when it was their duty to remain there and watch for fires that occur" and that from 6,000 to 7,000 persons were in the tent when the fire started, many of them women and small children.

One of the circus ushers, according to the coroner, saw fire running up the sidewall back of the bleachers on the right of the entrance and cried "Fire." With two others, he ran to the fire and threw water from buckets on it, but the fire continued to climb, jumped the space between the sidewall and tent top so rapidly that within 15 minutes the entire main tent was consumed.

"The cry of 'fire!' caused panic that was beyond description," states the finding, "and hundreds of people were thrown down and trampled in the effort to escape. While the fire was in progress on the top of the main tent, burning canvas fell on the people beneath and some of them rolled on the ground in an effort to extinguish the flames. No words are adequate to describe the conditions that existed."

Coroner fixed the origin of the fire at the southwest end of the tent and said "the evidence seems to show that it was caused by someone throwing a burning cigarette onto the folds of the sidewall canvas or on the ground."

THOMAS F. MAGNER.

States Authorize Fire Protection Districts

According to Dr. V. N. Valgren, U. S. Department of Agriculture, 15 states now authorize township fire protection districts; 11 states authorize county fire protection districts; 4 states authorize either township or county; and 7 other states authorize fire protection districts independent of existing political subdivisions. Minnesota has 208 township fire departments; Ohio has more than 200; California has 46 counties completely protected; Nebraska has 21 rural fire protection districts, Oregon has 37, and Washington has 34.

NEW CATALOG

Latest **FM or AM** *Equipment* **RELEASED** *for Police and Fire Stations*

FM or AM *Complete Matched Equipment* **ENGINEERED and BUILT by DOOLITTLE**

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YOURS FOR THE ASKING!

Every page contains vital facts you should have to obtain 1945 communication efficiency. Tells all about latest Doolittle STATION TRANSMITTERS — MOBILE RECEIVERS —MONITORS—CONCENTRIC TRANSMISSION LINES—AND ACCESSORIES. Shows the many advantages of modern two-way equipment . . . *completely engineered, built and matched by Doolittle.* Write on official stationery for your copy . . . at once.

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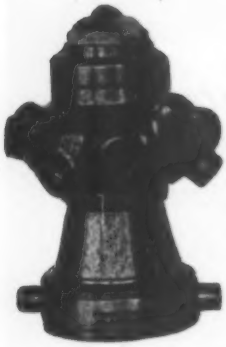
Builders of Precision Radio Communications Equipment

BRESNAN
CELLAR NOZZLE



Bresnan Cellar Nozzle comes in 2½ inch only. Ball bearing movement. A rugged, perfectly balanced nozzle.

POWHATAN fire department brass goods have established a reputation for trouble-proof service over a period of many years—since 1892!

These quality brass goods are now available if you have the right priority—but after V day, all you want. Remember Powhatan for quality!

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POWHATAN
BRASS & IRON WORKS
RANSON ★ WEST VIRGINIA

Phones 93 & 94 - Charles-Town, West Virginia

Established 1892

PERSONS IN THE NEWS

Retirements

T. L. Mewborn, Chief of the College Park, Ga., Fire Department for seventeen years, and a member of the Department since its inception, retired this month at the age of seventy-one.

Chief Mewborn, who served under four College Park mayors has the enviable record of never having been called on the carpet. Prior to joining the volunteer department, which he helped organize, he was in the hardware business. He saw the community and the Department grow until the latter had seven permanent men including the chief, with a strong volunteer organization. Local citizens give the Chief credit for their low fire losses; he has been outstanding in fire prevention work, and in the training of volunteers.

Chief Mewborn has been active in the International Association of Fire Chiefs, the Southeastern Association of Fire Chiefs and has never missed a convention since he was made Chief. He is also a graduate of the Georgia Fire College.

Chief Mewborn's host of friends in the fire service wish him Godspeed and the hope that he will continue his interest therein.

Chief George Barney has resigned as Chief of the Beacon, N. Y., Fire Department. His successor is George Cable of the Beacon Engine Company.

Battalion Chief Carl Dreesen, 10th Battalion, New York Fire Department, has retired to accept a commission as a Lieutenant in the Naval Reserve. He reports to the Navy Fire Fighting School, Brooklyn, N. Y.

Among the retiring chiefs of the New York Fire Department are J. L. Curry, 36th Battalion, and Michael Shanahan, 42nd Battalion, both pensioned.

David E. Stone, forty-eight-year veteran Deputy Chief of the Woonsocket, R. I., Fire Department has retired on pension and Captains Esdras L. Desaulniers and Leo J. Roy have been named Chief and Assistant Chief of the Department, following an unexpected action of the City Council.

The resignation of Hugh V. Dillon, retired captain of the Syracuse, N. Y., Fire Department, as chief of the Pine Camp Military Reservation Fire Department is announced. Succeeding Chief Dillon in the post is First Assistant Chief William F. Clapper, Watertown, N. Y., also a former Syracuse fireman. Stephen Holic is the new First Assistant Chief. (Thanks Sanford Dewey).

Ben Faus, reported to be one of the oldest fire chiefs in Oregon in point of service, has resigned as chief of the Merrill, Ore., Fire Department. He is succeeded by Robert Walker.

Earl Newton, Chief, and Robert E. Ward, Assistant Chief, Clarinda, Iowa, Volunteer Fire Department, have resigned their posts. Both are veterans of the fire service.

BETTER BADGES
than you ever got before—

For the past 64 years we have supplied the fire fighters of America with the finest badges they have ever worn.

Now—because of the government's prohibition of the use of nickel, brass, copper, nickel plating, and chromium — we are making these badges and insignia in sterling silver, sterling silver gold plated, rolled gold on sterling silver, and 14 karat gold.

Today — for just a little more, you get a sterling silver Braxmar Badge — without doubt the best badge you can buy anywhere.

Recommend Braxmar to all your fellow fire fighters and wear one yourself.

★

The blue covered catalog is the latest published but write for our new price list effective July 29, 1943. Only prices in the catalog on 14 karat gold items are still in effect. All auto plates are discontinued for the duration.

★

C. G. Braxmar Co., 242 W. 55th St., N. Y.

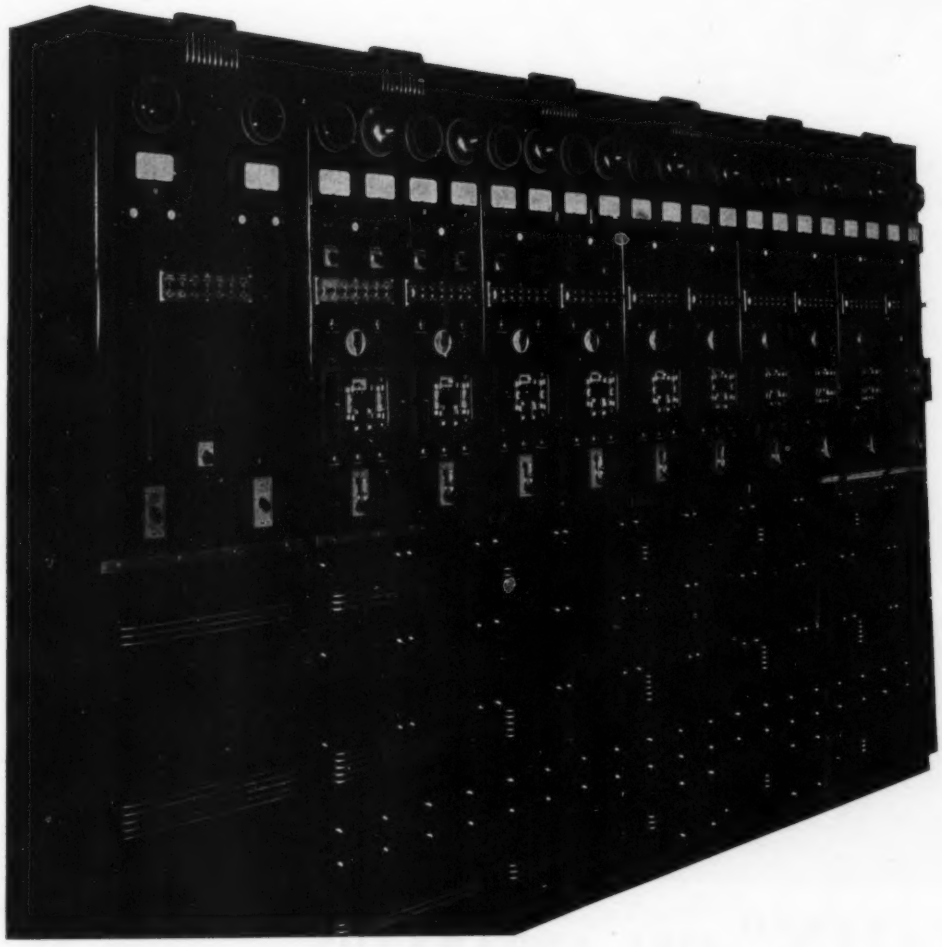
John O. Veit, Pres.

BRAXMAR BADGES

Standard for over 64 years

New Type Class A-B-C Fire Alarm Telegraph Switchboards

Supplied in Sectional Panels of Two Circuits Each



A COMPLETE FIRE ALARM TELEGRAPH CENTRAL OFFICE

MANUFACTURED BY

Southern Switch and Signal Company

"There Is No Substitute for Experience"

Shreveport, Louisiana

This new 1500-watt U. S. Portable meets your own specifications of what a fire department portable should be—because it is the result of our many years of experience building fire department units and becoming intimately familiar with your *exact* requirements.

★ 4-cycle air-cooled engine. 3.2 H.P.
★ Quick starting.
★ No fussing around mixing oil and gasoline.
★ Positive splash system lubrication.
★ Automatic voltage regulation under all loads. No adjusting necessary.
★ Equipped with carriers for easy portability.
★ Designed for *dependable* operation—a vital requirement for fire department service.
★ Larger and smaller sizes available.

Write for further information

UNITED STATES MOTORS CORP.
430 Nebraska Street Oshkosh, Wis.

"HAHN" FIRE APPARATUS

SINCE 1907

FINEST IN THE WORLD ★ STREAMLINED ★ BALANCED CHASSIS ★ AMPLY POWERED ★ VERY EFFICIENT PUMPS WITH PLENTY IN RESERVE

HAHN MOTORS, Inc.
HAMBURG, PA.

Appointments and Promotions

C. J. Eisenbacher is now Chief of the Tacoma, Wash., Fire Department.

J. F. Finnegan has been appointed Chief of the Richmond, Va., Fire Department.

Chief H. Q. Hopper of the Franklin Lakes, N. J., Fire Department was elected president of the new West Bergen Fire Chiefs' Association. Chief Edmund R. Cook of the Wyckoff Fire Department, was elected vice-president.

Norman Carey was re-elected president of the Northfield, N. J., Volunteer Fire Department.

Alfred T. Hudson was elected Chief of the Hudson, N. Y., Fire Department for the next two years.

Arthur J. Gilbert has been appointed First Assistant Chief of the San Jose, Cal., Fire Department to succeed Dominic E. Cavalaro who has retired. He has been a member of the department since 1918.

J. C. Doughty has been re-elected Chief of the Sewickley, Pa., Fire Department. E. J. Lemeke is Assistant Chief.

Deputy Chief Warren S. Barton, 4th Division, New York Fire Department, was installed as Commander of American Legion Post 930, that city.

Captain George Kahn, New York Fire Department, has been elected President of the Naer Tormid Society, New York Fire Department—the city's organization of Jewish firemen.

F. R. Chantry has been reelected Chief of the Malvern, Ia., Volunteer Fire Department.

Art Wagner was re-elected Chief of the Chino, Cal., Fire Department.

The Linden, N. J., City Council has passed an act eliminating the rank of lieutenant in the fire department and advancing eight men who hold that rank to the post of captain. The men are Lieutenants Albert Wilke, William Lindsay, Andrew More, William Berlin, Jerry Marhan, William Weitzman, William Vornbaum and Charles Lutz.

Deputy Chief Patrick J. Keelan has been appointed Chief of the Elizabeth, N. J., Fire Department by the Board of Fire Commissioners. Battalion Chief Lawrence M. Wayson was promoted Deputy Chief to succeed Chief Keelan, and Captain William C. Luxich was advanced to fill Chief Wayson's post.

Chief Keelan succeeds Chief Harry A. Jarvis who retired after 38 years of service. Chief Keelan, well known to the fire service, was born in Elizabeth, N. J., Feb. 27, 1890; was appointed to the Department July 16, 1912; made driver of Eng. Co. 3 in 1914; appointed Lieutenant, May 16, 1918 and was raised to Captain, May 16, 1925, and located at Eng. Co. 2. In Jan. 1928 he became Battalion Chief.

William C. Garvin former Assistant Chief of the Yonkers, N. Y., Fire De-

KAAR PTS-22X TRANSMITTER

22 WATTS—30-40 MC

The Kaar PTS-22X transmitter provides reliable and efficient high-frequency communication from military, civil and commercial mobile units. It has a rated output of 22 watts.

The standby current is zero, as instant heating tubes are used, lowering the demands on the battery of the vehicle. Transmission is completely controlled by a "push-to-talk" button on the microphone. This button lights the tubes, starts the dynamotor power supply, silences the receiver, and switches the antenna to the transmitter—all in a fraction of a second!

KAAR PRS-9X RECEIVER

10 TUBES—30-40 MC

A remote control box, mounted on the dash of the vehicle, controls the receiver located in the trunk compartment. The box contains a combined *on—off* switch and volume control, a red jewel light to indicate when the receiver is on, and an *off* switch for the no-signal squelch circuit.

The no-signal squelch circuit automatically silences the receiver except when calls are actually being received. In addition, an automatic noise silencer circuit makes difficult reception understandable by reducing electrical and ignition interference.

For swift checking and servicing, both the transmitter and receiver may be removed from the vehicle by releasing four luggage-type catches. The dust covers are likewise removed by releasing two catches.

For transmission in the 1600-2900 KC range inquire about Kaar PTL-22X transmitter and 11X receiver. Other ranges available on special order.

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HYDRANTS
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Conform to American Water Works Association specifications. Approved and listed by Underwriters' Laboratories and Associated Factory Mutuals. Well known and widely used for many years.

SPECIAL TRAFFIC MODEL (shown at right) is designed to yield at ground line under impact, repair being simply renewal of breakable bolts and breakable coupling on stem. Dry top, revolving head, easy to lubricate. High efficiency because barrel diameter not reduced and there are no working parts or obstructions in waterway.

VALVES: A. W. W. A. types, iron body, bronze mounted with double-disc parallel seat or solid wedge type. Non-rising stem, outside screw and yoke; or with sliding stem and lever. Also furnished hydraulically operated. Square Bottom type operates in any position. All are rugged and dependable, made of best material with highest quality workmanship.

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partment, was appointed to the post of Chief January 16, 1945. He succeeds Edward H. Siller who retired after being injured in line of duty.

George W. M. Brown, former Chief of the Newburgh, N. Y., Fire Department and prominent in the State Fire service is a first lieutenant in the Engineer Corps, on duty overseas.

Deaths

Paul Lefke, retired Chief of the Lansing, Mich., Fire Department, for over forty years a fire fighter, died of a heart ailment. He was a call man in the volunteer department in 1903; was appointed a paid man in 1905; made Captain in 1907; Assistant Chief in 1917, and succeeded the late Chief Hugo R. Delfs in 1941. He retired in June, 1943. Chief Lefke was widely known and popular in the fire service; was a veteran of the Spanish American War, a member of the International Association of Fire Chiefs, the Great Lakes Association of Fire Chiefs and the Michigan Fire Chiefs Association.

Chief George F. Beardslee Dies

George F. Beardslee, former Assistant Chief of the Bridgeport, Conn., Fire Department, died on January 10, following a short illness. He was 73 years of age and served as a fireman nearly 41 years, being appointed to the Bridgeport Department on April 1, 1892.

On June 1, 1892, he was named driver of Truck Co. No. 1 and on May 1, 1896, advanced to Captain, Truck Co. No. 2. On February 3, 1914, he was detailed as Assistant Chief and on August 1, 1915, was named First Assistant Chief.

Chief Beardslee's health was impaired as the result of a fire in 1932 at the Hadley Furniture Company, Bridgeport, and he was retired. He was the son of a fire chief, the late Chief Frederick P. Beardslee, who headed the Bridgeport Fire Department from 1890 to 1899.

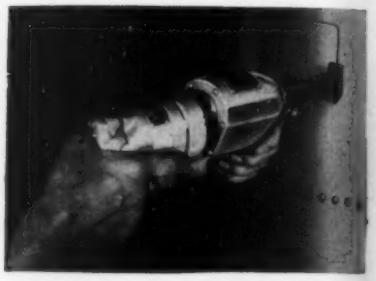
Chief George Beardslee is survived by his wife, one son, Frederick W. Beardslee of the Fire Engine Division of the Mack Manufacturing Company; two brothers, Clarence, a member of the Bridgeport Department, and Walter, of Bridgeport. A surviving sister, Mrs. Florence Brooks resides in Toledo, Ohio. Members of the Firemen's Sick Benefit Association, of which the late Chief Beardslee served for many years as Treasurer, acted as pallbearers at the funeral services, held January 12 in Bridgeport.

THOMAS F. MAGNER.

Chief Armstrong's Son a War Casualty

Frank Guy Armstrong, son of ex-chief and Mrs. James Armstrong, Kingston, Ontario, died on active service overseas, January 22nd, 1945. He was a member of the Kingston Fire Department for 20 years and had been promoted to Electrician of the Department before his death. He enlisted in 1941 and on D Day 1944 went into action at the front. He is survived by his wife and nine-year-old son.

THE NEW
SAW-GUN
SHOULD BE STANDARD
ON ALL
FIRE-FIGHTING EQUIPMENT



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The Saw-Gun is a portable power-saw that will quickly cut into all metals, wood and other materials. Quickly attaches to any electric or air drill, and may also be propelled by a flexible shaft. Insert ordinary hack-saw blade for cutting.

Firemen equipped with this handy tool can now get at the fire quickly. Can cut openings into obstructions regardless of their material. Cuts rapidly through heavy gauge steel. No need to waste precious time removing steel gratings . . . cut them out of the way with this amazing portable tool. Does away with slow, cumbersome, dangerous gas cutting torches, together with their long lines of hose and heavy tanks.

Progressive fire-chiefs who know the importance of getting at a fire *fast*—who want a quicker means of getting to entrapped persons, will add the Saw-Gun as standard equipment.

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QUICK SHIPMENTS ON AA-5 PRIORITY OR HIGHER

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IN REPUBLIC FIRE HOSE AND CHEMICAL ENGINE HOSE

THE ABILITY to withstand pressures, exterior abrasion and abuse, together with a flexibility for ease in handling, assure long service and dependability in both. Republic brand Fire Hose is an extra-quality product, with matched jackets of heavy cotton yarn and a tube of specially compounded synthetic rubber, designed for high flexibility and long aging.

Republic Chemical Engine Hose is constructed with an acid-resisting synthetic tube, reinforced against pressures with strong plies of duck, and covered with an abrasion-resistant synthetic cover. This hose is built to meet the requirements of Underwriters' Laboratories.

For consistant quality and long service, consult your nearby Republic Distributor.

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INSTANT, ACCURATE MEASUREMENT OF NOZZLE PRESSURE AND RATE OF FLOW IN G.P.M.

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ELIMINATES GUESSWORK AND DANGER TO HOSEMEN BY PROVIDING FOR INSTANT, ACCURATE CONTROL AT THE ENGINE

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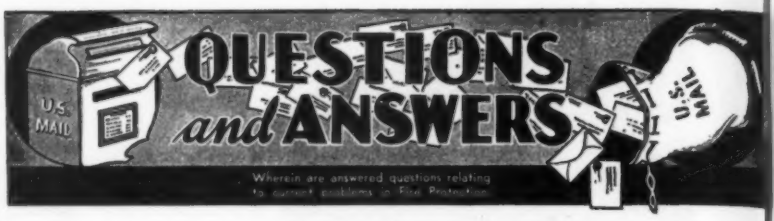

Effective Reach of Streams

To the Editor:

Which stream would have the most effective reach, a 1-inch nozzle operating off a pumper at 120 pounds pressure (any given length of 2½-inch hose) or a 1¼-inch nozzle operating under the same set-up?

D. B.

Answer: If the line of hose in each case is 100 feet in length, the streams from 1-inch and 1¼-inch, effective reach, would be approximately the same, and in the neighborhood of 82 feet.

When the line is 200 feet in length, the range of the stream from the 1-inch nozzle would be around 77 feet, while that from the 1¼-inch nozzle would be 74 feet.

With 500 feet of hose in the line, the range from the 1-inch nozzle would be 77 feet and from the 1¼-inch nozzle, 56 feet, while if the line is 1,000 feet in length, the range of the 1-inch stream would be 61 feet and that of the 1¼-inch nozzle, 32 feet.

The ranges given above are the effective reaches of the fire streams and not the maximum reach of the furthermost particles of water.

Nozzle Pressure at the Cleveland Fire

To the Editor:

In your story on the Cleveland fire in the December issue, it is reported that the fire boat operating at 150 pounds pump pressure, worked through 2,000 feet of 2½-inch hose split into two lines 500 and 600 feet long with ¾-inch tips, and delivered "two very good streams." If the pump pressure was 250 pounds, instead of 150 pounds, the streams would answer that description, but at 150 pounds they would fall into the "feeble" class with less than 25 pounds nozzle pressure and 75 gallons a minute each, according to the only ¾-inch tables I have.

H. B. C.

Answer: We quote from a letter received from Battalion Chief Emmet H. Byrne, Commanding Bureau of Fire Education, Cleveland, Ohio:

"There is a very good problem in hydraulics presented in the layout of line and operation of the streams from the Coast Guard fire boat.

"There were 2000 feet of 2½-inch line laid from the boat into a wye from which two lines of 2½-inch hose were laid, one line 600 feet in length with a 5/8-inch nozzle, and the other 500 feet long with a ¾-inch nozzle. Pump pressure was 150 pounds and the line was laid up an incline of 40 feet.

"There was no pitot gauge handy to take a reading of nozzle pressures but Captain Denk of the Cleveland Fire Department directing their operation and Chief Engineer O. R. Hoskins of the Cost Guard fire boat estimated approximate working pressures at nozzles of from 25 to 30 pounds. We later figured this pressure at approximately 24 pounds."

Subsequent calculations made by the Editor indicate that the pressure at the ¾-inch tip was around 23 pounds, while that at the 5/8-inch tip was around 26 pounds.

The line of hose was laid up an incline of 40 feet, but no definite figures are on hand to indicate the vertical rise on this incline.

We have assumed that such vertical rise was 16 feet, from the calculations referred to above.

Discharge from Turret Pipe

To the Editor:

The following question was asked in a recent lieutenant's examination:

"You have been directed to place your 750-gallon pumper carrying 1,000 feet of 2½-inch hose at a hydrant and deliver your full rated capacity to a turret pipe. The distance requires a layout of 300 feet. What hose layout would you use and what pump pressure will be required?"

I am of the opinion that three parallel lines of 2½-inch hose should be used. Am I correct? R. J.

Answer: I feel you are correct in your assumption that three parallel 2½-inch lines should be stretched from the pumper to the turret pipe.

If we use a 1¾-inch nozzle on the turret pipe, at 68 pounds pressure, we will have a discharge of 750-gallons per minute.

Solving for engine pressure, K for three parallel lines of 2½-inch hose and 1¾-inch nozzle is .115.

Then E. P.=N. P. x (1.1÷.115 x 6)
=68 x 1.79, or 121.7 pounds.

Thus with this layout we would be utilizing the full capacity of the pumper.

Dust Explosion Hazard in Iron Foundry

To the Editor:

Please tell me if there are any possibilities of a dust explosion in an iron foundry. WM. F. McN.

Answer: There should be no danger of explosion in a foundry because of the presence of earth and powdered stone.

One of the methods of protecting coal mines against dust explosions is to powder the ledges with clay or other similar material which is not combustible and which when mixed with air and combustible dusts prevents explosion.

"Look at all three"

HALL-SCOTTS (MODELS 470-480-400)

FOR POWER-PACKED PERFORMANCE!

Whether you need a new power plant under the hood or are going all out in new equipment—there's a Hall-Scott motor to meet your specifications and to take your hardest service!

If it's the big "baby" you want—the "400" of the "400" Series with 5¾" bore and 7" stroke can handle a 2000 gallon pump as easily as ordinary motors supply half the capacity—and for 24 hours of steady pumping. Slightly smaller, models "470" and "480" with bores and strokes of 5½" x 6" and 5¾" x 6" respectively, pack power in proportion.

All Hall-Scotts develop their full rated power at 2000 R.P.M. and maximum TORQUE at the low, engine-saving, upkeep-saving turnover of 1300 R.P.M. And with their unit assembly design, any and all Hall-Scotts can be out fighting fires, while a part is serviced in the shop.

HALL-SCOTT *Motor Car Company*

FACTORY AND GENERAL OFFICES: 2850 SEVENTH STREET, BERKELEY 2, CALIF.
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Flexibility of Performance (ability to adjust pumping needs to a wide range of fire-fighting conditions) is a notable characteristic of the Hale series of multi-service Centrifugal Fire Pumps, operated in Series for pressure . . . and in Parallel for volume.

Built in all standard capacities, they are highly efficient and dependable pumps, designed for use with modern motors.

If you are in the market for new fire apparatus, write us today for information on the complete line of Hale Fire Pumps.

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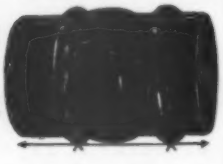
DOUBLE SERVICE *with* BI-LATERAL

This installation shows the position of the rubber lining in BI-LATERAL FIRE HOSE when held in a flattened position between calls into service. This is why we can save a city one replacement, because this hose will give double service of any hose constructed under the old method.

Also we can load 25% more on the apparatus bed actually making an $8,000 truck loaded with Bi-Lateral construction, cheaper than a $7,000 one loaded with other construction.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze) with the swivel protecting feature.



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JANESVILLE QUALITY TURN OUT CLOTHING

Our turnout suits are giving excellent satisfaction in most of the large fire departments throughout the U. S. and

THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY

NOW AVAILABLE!
We can now supply old type ¾ Felt-lined Firemen's Boots.

JANESVILLE APPAREL CO.
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Oklahoma A. & M. Ventilation Practices

The latest addition to the series of texts published by the Oklahoma A. & M. College, "Ventilation Practices" is now being distributed. This is known as Unit VII in the series on Fire Service Training and is like its predecessors in format. It contains 34 pages of suggested teaching material on ventilation arranged under thirteen chapter headings, with numerous illustrations.

Like its predecessors, Unit VII is prepared by the Department of Trade and Industrial Education, Oklahoma A. & M. College and the State Board for Vocational Education Division of Vocational Trades and Industries. Copies may be procured from the A. & M. College Book Store, Stillwater, Okla.

FCC Assigns Fire Service Rapid Channels

(*Continued from page* 102)

Commission found it impossible to find sufficient space in the band between 100 and 150 megacycles for the assignment of the number of channels requested for this service. However, the present allocation plan tentatively provides for 20 channels in the band between 156 and 162 megacycles primarily for fire and secondarily for forestry-conservation. It is believed that frequencies within this band will have propagation characteristics only slightly different from those requested by the fire service through Committee 2, R.T.P.B. and will provide for part of the mobile radio service proposed to be conducted on the 30 to 40 megacycle band. For intercommunications between land stations and mobile units within small metropolitan areas, it is believed that frequencies above 100 mc. may prove to be more desirable than the frequencies within the 30 to 40 megacycle band. The higher frequencies permit smaller geographical separation between stations and there is less interference from static and electrical devices on these frequencies.

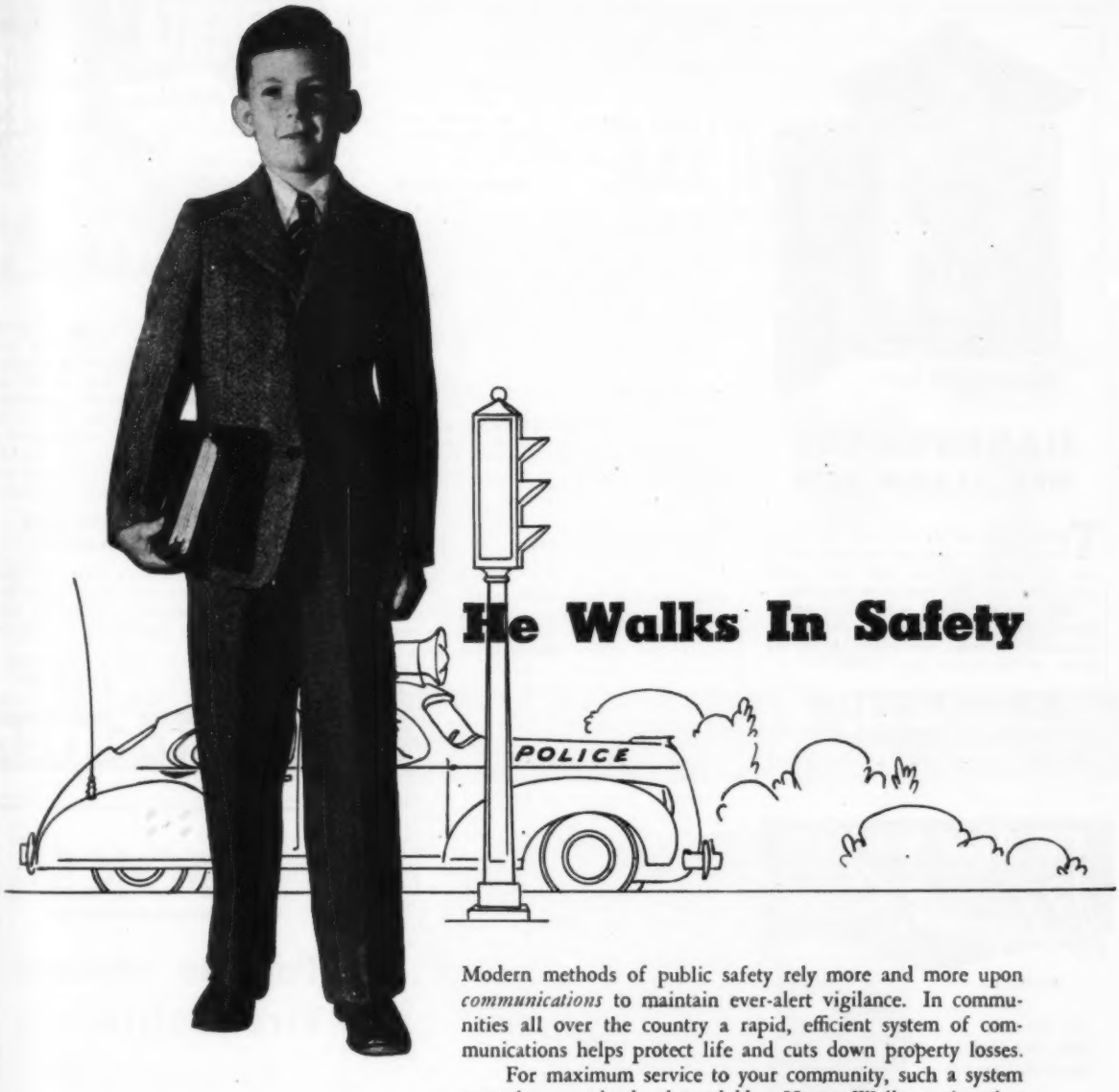
In many cases, a large part of the communications handled by the fire department will be confined to inter-communications between land stations, portable and portable-mobile units operating within the municipality. Since this type of service is restricted to more or less small geographical areas it is believed possible that in certain cities the shared use of television bands will provide the necessary facilities for the expansion of the fire service.

Committee 2, speaking for the fire service, also requested that experimental channels be made avilable to that service for its postwar needs. In reply, no specific channels were indicated by the Commission, and it is assumed that the frequencies above 400 megacycles, which have been tentatively proposed for experimental purposes generally, will satisfy this need.

The Post-War Picture

Shorn of technicalities, where does this leave the fire service so far as postwar radio is concerned? Summing it up, the Commission proposes to assign the service the following:

It will provide channels for a much wider use of radio in the fire service, which hitherto has been forced to depend for the most part on an outgrown



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Modern methods of public safety rely more and more upon *communications* to maintain ever-alert vigilance. In communities all over the country a rapid, efficient system of communications helps protect life and cuts down property losses.

For maximum service to your community, such a system must be *completely dependable.* Harvey-Wells engineering skill and imagination are constantly perfecting communications equipment of utmost reliability to serve the public safety.

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Kindly mention FIRE ENGINEERING *when writing advertisers*

HARRINGTON FA-26

HARRINGTON
FIRE ALARM BOX

THESE high quality fire alarm boxes are made of cast aluminum inside as well as out. This makes for fast, light, easy installation and long life, free from corrosion.

They are equipped with quick action doors, made to meet every specific requirement, and are non-interfering of the shunt and successive type circuit.

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THE *New* WHEAT
Rechargeable Spotlight

MODEL 158

2500 FOOT BEAM
75000 CANDLE POWER
1000 HOURS OPERATION

Critical Materials Reduced to a Minimum to Insure Availability

FEATURES

★ Positive "non-spill" Construction
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★ Free use of Hands. Light carries conveniently on Shoulder Strap
★ Weighs only 92 ozs. complete
★ Simple to Charge and Water No need to take Lamp apart
★ Light can be Focused and Directed as Desired

WRITE FOR COMPLETE DETAILS

KOEHLER MANUFACTURING COMPANY, INC.
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arrangement of sharing police frequencies.

It proposes to allocate to the fire service:

1. Fifteen (15) channels 40 kc. wide in the 30 to 40 megacycle band.

On a basis of an assumed average channel width of 40 kc. minimum provisions will be made for the following services in the band 30 to 42 kc.:

Channels	Class of Station
15	Fire

2. Twenty (20) channels in the band between 156 and 162 megacycles primarily for the fire service. Provisions will be made for the following services on the basis of an assumed average channel width of 60 kc. in the 156 to 162 mc. band. Exact channel width and distribution to be determined after further evaluation of developments as to need and consideration of technical factors.

Channels	Class of Station
20	Fire

EXPERIMENTAL

Although the Commission has not assigned any specific channels for experimental work to the fire service, in response to the request of Committee 2, Panel 13, it is assumed that the frequencies above 400 megacycles which have been tentatively proposed for experimental purposes, will generally satisfy the needs of the fire service.

In its report, the Commission emphasizes the point that most, if not all the proposed allocations cannot be placed in effect until after station equipment and other material facilities and manpower become available for civilian use. The Commission is expected to continue indefinitely and perhaps strengthen its present policies, restricting the use of critical materials and manpower for civilian radio purposes.

Meanwhile considerable technical engineering work must be done on allocations tests, etc., before the rules can be promulgated. In this connection, engineers for the Commission at the October 20, 1944 hearing, accepted President Sam Pope's offer to have the International Association of Fire Chief's Committe on Communications and such advisory technicians as the Association may desire to include work with the Commission to take up the slack between that body and the fire service, as it has done in connection with War Production Board allocations. Whatever future course may be adopted, it is certain the communications committees of the two Associations, the I.A.F.C. and the I.M.S.A. will continue to work shoulder to shoulder with the Radio Technical Planning Board through Committe 2, whose chairman is Herbert A. Friede, a member of both Associations. The chairman of the International Association of Fire Chief's Committee is Chief Roi B. Woolley.

Report of Melbourne Fire Brigade

The report of the Metropolitan Fire Brigades Board, Melbourne, Australia for the Year Ending June 30, 1944 is interesting.

The total number of fires reported for the 51 Districts was 3,776, of which 1,122 were rubbish or grass fires, and 131 due to chimneys. Only 23 of the fires were listed as *"considerable damage"* and only one as *causing "very considerable damage."* This was in Sandringham. The Brigade had 42 fire stations 347 permanent employees, all ranks, and 101 special service firemen, as of June 30, 1944.

Fyr-Fyter equipment has proven its value in preventing small fires from becoming disastrous through the loss of life and property. Recent catastrophic fires with terrific loss of life emphasize the urgent need of fire protection. A Fyr-Fyter Instant will usually check most any fire if used immediately.

HELP SAVE LIVES AND PROPERTY

Get Fyr-Fyters for safety's sake. We advise and serve war production plants, public institutions, etc., immediately. Write us today regarding Fyr-Fyter equipment for your own protection.

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Recognized by the Fire Service as Standard

Questions and Answers for Lieutenant and Captain—$2.50

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Manufacturers' Announcements

Kerotest Appoints Herman F. Kuch

Kerotest Manufacturing Company, Pittsburgh, Pa., has announced the appointment of Mr. Herman F. Kuch as special representative in the development of their present fire apparatus and new products now in process.

Mr. Kuch was formerly Acting Chief, Division of Apparatus of the New York Fire Department and has been associated with the New York Department for the past 46 years.

He is a recognized authority on all types of fire fighting equipment.

Useful Combination Catalog and Informative Data Folder

The Wooster Brass Company, 1415 E. Bowman Street, Wooster, Ohio, has published and distributed to municipalities of 3500 and over, a most useful addition to fire service informative printed matter.

This takes the form of a 20-page wall hanger, measuring 17 inches by 21¼ inches, which illustrates and describes scores of appliances and accessories essential to the fire service. Included, also, are a wealth of engineering data, tables, etc., on hydraulics, fire streams, first aid and fire department operations, together with information on war and patriotic subjects. There are also entire calendars for the years 1945 to 1950.

We are informed by the Wooster Brass Company that, although this wall hanger has been widely distributed, numerous communities and departments did not receive it and that copies will be made available to them upon request.

National Foam Changes

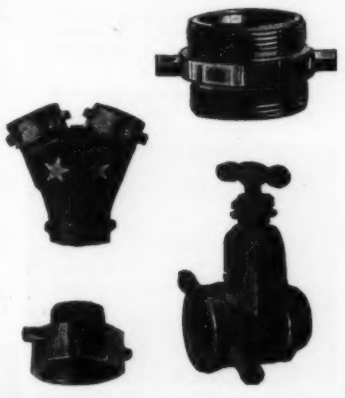
National Foam Systems, Inc., Philadelphia, Penn. announce two changes in its executive personnel for 1945. Hart H. Fleming, a director for 15 years has assumed the vice presidency of the Company. He remains as director. Mr. Fleming has engaged in many diversified activities in the petroleum industry. He is a former member of the Flammable Liquids Committee of the National Fire Protection Association.

G. Gordon Urquhart has resigned as vice-president of the Company but will continue to serve as technical consultant. He became vice-president and a director of National Foam System, Inc. in 1935. Mr. Urquhart is joining the Wilmington Chemical Corporation, as president.

New American-LaFrance Folder

American-LaFrance-Foamite Corporation, Elmira, N. Y., has issued a new illustrated folder describing the various types of foam applicators which are made available by the government release of aluminum which for some time has been unprocurable for this purpose.

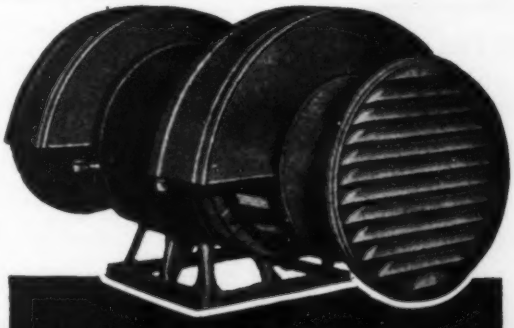
The folder describes the fixed foam delivery pipe systems for protecting flammable liquids in storage—with emphasis on the company's Foamite Applicator.



We are not known only as manufacturers of exceptional Deluge Guns, but also, for fittings of all types, a few of which are shown.

Careful workmanship and inspection warrants your consideration. We will appreciate your writing for any information desired.

SAMUEL EASTMAN COMPANY, Inc.
CONCORD, N. H.



STERLING MODEL "M"
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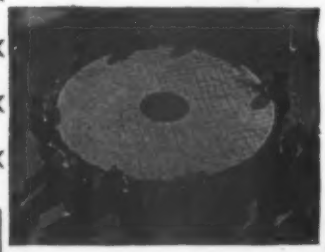
"the finest," have been instrumental in saving many hundreds of lives, without injury to the person rescued or to the men holding the net.

The many exclusive features of the Atlas net have been proven through performance. ATLAS NETS are still available and are the only modern, up-to-date nets, with dual action impact absorbers.

Specify ATLAS when you want dependable life nets.



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Union Made **Prompt Delivery**

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Manufacturers
Fireman Cap Specialists for Over 50 Years

Jay Stevens Advanced

Jay W. Stevens, since 1921 chief of the National Board of Fire Underwriters' Fire Prevention Bureau on the Pacific Coast has been appointed assistant manager of the San Francisco office, effective February 1, 1945. He succeeds Charles H. Lum, who has held the position since the establishment of the office but who is now on leave of absence due to ill health.

Jay W. Stevens

Jay Stevens is widely known through his contacts with municipal and state officials and business groups concerned with fire prevention and fire protection, principally in the Pacific Coast and western states.

Previous to joining the National Board, Chief Stevens was head of the Fire Prevention Bureau of the Pacific, a subsidiary of the Board of Fire Underwriters of the Pacific. He started his fire prevention career as a member of the Portland, Oregon, Fire Department and later served as Fire Marshal. For 23 years he has been Secretary-Treasurer of the Pacific Coast Association of Fire Chiefs and for 19 years, Executive Secretary of the International Association of Fire Chiefs.

Chief Stevens' appointment was confirmed by Wilbur E. Mallalieu, Manager of the National Board, at a special luncheon on February 1, 1945, at the Pennsylvania Hotel, New York City. At this luncheon, which was attended by leading officials of the National Board, and the Board of Directors of the International Association of Fire Chiefs, Mr. Mallalieu assured his hearers that his new position and duties would in no way lessen Chief Stevens' close contacts with the fire service.

Book Reviews

CAREERS IN SAFETY: Choosing a Vocation in the Field of Accident Prevention. By Herbert J. Stack, Ph.D., Director, and Associate Authors, Charles C Hawkins, Ph.D., Research Associate, and Walter A. Cutter, Ph.D., Administrative Assistant, Center for Safety Education, New York University. A Kitson Careers Series Book. Publishers, Funk & Wagnalls Company; publication date, January 20, 1945.

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Portable equipment is the watchword of today.

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The element of time is of first importance in the successful treatment of burns. If a burn is treated within 15 minutes after it occurs, the probability of blister formation is reduced to a minimum. But if time is wasted before proper treatment is started, serious complications and infection may follow.

When using Gebauer's TANNIC SPRAY in the treatment of burns, the factors involving time-loss are eliminated. This preparation is a stable solution of tannic acid ready for immediate use. Packaged in a sturdy amber bottle having an automatic dispensing cap, which permits the projection of the solution in the form of a fine jet stream. Upon application the solvent evaporates rapidly, covering the burn with an evenly applied, dry and flexible film of tannic acid.

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War Fare

By Roi B. Woolley

No (s) Kidding in Huron

Santa Claus, disguised as the office of civilian defense, made the Huron, Ohio, Fire Department a present of a 500 GPM pump, whereat there was much rejoicing among the vamps. Unfortunately, there was a joker in the deal—the pump is a white elephant until some good Samaritain can be found who will provide either a truck or trailer to mount and transport the device to and from fires. At present the community is fresh out of automotive equipment.

Fire Chief Mel Dahlhofer, with the help of the local press and spirited citizens, hopes to find an "Angel" who will loan or give the Department the necessary "rolling stock."

* * *

Oh For the Life of a Fleugswaefel

Somewhere in Germany a crew of Heinie firemen tried twice to put out a fire and then had to walk home (mebbe some hadda be carried!) their efforts a complete flop.

Captain Gerald Montgomery of Fort Worth, Tex., leader of a flight of United States Mustang fighters, saw them trying to extinguish a factory roof blaze, and circled the spot until the fire was put out.

"Then we went down and started it again with incendiary bullets," said Captain Montgomery. "When the truck began fighting the fire again we shot up their equipment. Everything burned, the fire truck included."

* * *

WAC Burned Up, Too!

Out in Denver, Colo., Capt. Grace Polk of Corsicana, Tex., commanding officer of the Buckley Field WAC detachment, was burned up, too when she learned what had happened!

Seems that in cleaning the WAC officers' headquarters, a new maid inadvertantly burned the Captain's marriage license, promotion order, birth certificate car title and war bonds. Girls! Page the Fire Department!

* * *

Coast Guard Fights Fire from Air

The report of the Coast Guard of the Third Naval District states that in the year ending November 1, 1944 it had saved 5,218 civilians from death or injury; had assisted 1,000 vessels and 40 planes, and had used helicopters in fighting fires in otherwise inaccessible places and in rescuing persons.

We learn that in midsummer, a fire threatened a Long Island R.R. bridge over Jamaica Bay, and fire apparatus could not approach the scene. It was impossible to stretch fire hose to the reach the blaze. Well, sir, a Coast Guard helicopter flew over the site and fire-extinguishing apparatus was lowered to the firemen. Thus did 1944 usher in a new technique in fire fighting!

* * *

Those Floating Silvery Balls!

Late in '44, Germany was disclosed to have thrown a new "device" into the war, according to heavily censored accounts,—mysterious silvery balls which float in the air.

Pilots report seeing these wierd objects, both individually and in clusters,

HOSE BRASS GOODS
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BACK THE ATTACK ON FIRE WITH FIRE DEPARTMENT SUPPLIES OF DISTINCTION

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Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the Facts

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during forays over the Reich. The purpose of the floaters was not immediately evident. It is said to be possible that they represent a new anti-aircraft defense instrument or weapon.

* * *

Hot Off the Ticker

Brooklyn Village, Ohio, got a turn down by FWA for its plans to build a new fire station. . . . The firing of red flares attached to tissue paper parachutes marked "Made in Japan" in Elizabeth, N. J., was attributed by Police Chief Frank Brennan to a prankster. . . . **A bill calling for the construction of airports and improvement of existing fields at a cost of $650,000,000 has been introduced in the House by Clarence F. Clea, chairman Interstate and Foreign Commerce Committee. About 5,000 cities and town were described as potential recipients of one or more airports.** . . . Over twenty-three died as result of crash of a 10-year old Clipper at Port of Spain, Trinidad. The plane hit a small boat. . . . Executives of half a hundred public and private water supplies in the congested metropolitan sections of New Jersey were warned against attempts by enemy agents to sabotage water facilities. . . . Four workers of Consolidated-Vultee Aircraft Corp. were fired as result of bomber crash at San Diego, Calif. in which six civilian crew members were killed and a brush fire started by the exploding plane. Reports were that there were not enough bolts in a wing section of the giant Liberator. . . . Reports from the Italian frontier claim that 4,000 Nazis were killed in an explosion in a tunnel near Genoa, Italy. . . . **To combat a growing manpower shortage and to maintain the fire and police departments at maximum possible strength, says the press, firemen in Louisville, Ky. may now work in the department on their days off.** . . . The New York City Council has voted a local law which would grant half pay to city firemen now in the Armed Service who return permanently disabled from the war. . . . A successful battle at sea against flames which followed collision of a freighter and a tanker carrying 100 octane gasoline was reported by the Navy. Two small destroyer escorts were credited with "skilful seamanship and courageous action" in quelling the fire. . . . The German's "new" secret weapon (December version) was reported to be not "V-3" or "V-4" but "V-1½" apparently a barrage weapon, it takes the form of a selfpropelled shell. . . . It has been disclosed that in the early days of the blitz on London a bomb crashed through the roof of Buckingham Palace and through the apartment of the Queen. The 3-foot missel failed to explode; the Queen wasn't there anyway. . . . **German bombers and V bombs killed 8,098 British civilians and seriously injured 21,137 in the first 11 months of 1944 bringing the total dead, since 1940 to 54,205.** . . . The Newark, N. J., air raid warning system established by school authorities as a precautionary measure, was called upon to transmit messages to approximately 67,000 pupils cautioning them against touching a box of sodium cyanide pellets, stolen from a parked auto. . . . **Japan is really worried. It will spend 2,000,000,000 antique yen for shelters for civilians and government officers and expansion of fire fighting facilities.** ... According to an OPA report, 26,000 hand operated sirens, manufactured for

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have these features

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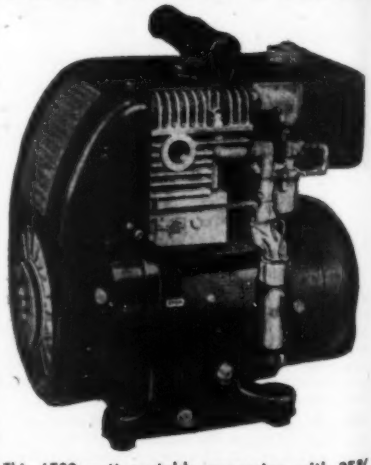

This 1500 watt portable generator, with 25% reserve, especially designed for fire department service. Lightweight, rugged and compact. Air-cooled 4-cycle engine 2¾" bore x 2¾" stroke. Quick starting. Fully guaranteed, thoroughly dependable.

Also from 600 to 2500 Watts in A.C. and D.C.

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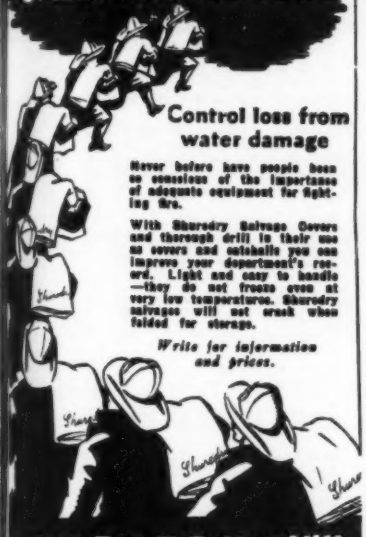

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Never before have people been so conscious of the importance of adequate equipment for fighting fire.

With Shuredry Salvage Covers and thorough drill in their use as covers and catchalls you can improve your department's record. Light and easy to handle—they do not freeze even at very low temperatures. Shuredry salvages will not crack when folded for storage.

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the Army, have been sold by the Government for civilian use.... Commissioner and Chief Patrick Walsh, N.Y.F.D. announced the dismissal in January of eight firemen found to be doing outside work on their off-duty hours. Five firemen were dismissed for the same reason in 1944. . . . In December 20 men were hurt, five critically, in explosion which wrecked the Straight Line Foundry in Syracuse. . . . Two employees of E. I. du Pont de Nemours & Co. plastics research department were fatally burned by explosion of gaseous vapors. . . . Prompt action by an air raid warden and her soldier son in Yonkers, N. Y., prevented a serious fire in frame apartment building, that city; they discovered fire, assisted occupants to escape; summoned firemen. . . . **Second Lieut. Charles W. (Shoot'em) Shea, Bronx, N. Y. C., Medal of Honor hero wants to be a fireman when he gets back home. He has two relatives in the F. D. whose friends have written Mayor LaGuardia a plea to give the Lieut. his wish.** . . . A giant balloon believed of Jap origin and similar to one found near Kalispell (Mont.) was investigated by FBI; The balloon, lodged in a tree, was discovered about 10 miles from Estacada, Ore. It had a gas capacity of 18,000 cu. ft. . . . Overcome by ammonia fumes in hold of a freighter at North River pier, N. Y. C., 20 workmen were rescued by members of N.Y.F.D. Rescue Squad 1. . . . Lot of vitamines went up in smoke when the Charles Noble Company's vinegar, sauerkraut and alcohol plant near Clyde, N. Y., burned. Plant was working on Gov't contracts. . . . Captain James J. Casey of a Liberty ship died as result of fire in his quarters aboard ship, at Boston Army Base, January 13. . . . When a big Army C-46 cargo plane crashed and burned on take off at LaGuardia Field airport in January crash crews aided by municipal and Army firemen controlled blaze employing,—according to the press—: **"latest fire equipment using chemicals and water spray.** . . . Fire in an unidentified Australian port, caused by welder's torch, caused loss of $1,500,000 in January. . . . When an unidentified counter girl caught fire in Basement of a White Castle Restaurant, N. Y. C. and ran screaming to street, a sailor beat out the fire, then nonchalantly finished eating his hamburger, and left—also unidentified. Girl victim went to hospital. . . . An Engineer fire-fighting school, only one in the country, it is said, has been moved to Fort Lewis from Camp Ponchartrain, La. It teaches engineer fire-fighters how to battle fires in ammunition dumps, gasoline and oil reserves, etc. . . . **According to figures release by war department 11,000 lives have been lost in 5,600 fatal army air force accidents in U. S. A. since Pearl Harbor. Of the 17,500 planes "lost" in the U. S. in the same period, 11,000 were cracked up in wrecks. Fire occurred in a large percentage of crackups.**

* * *

"Superflamer"

Emitting a white jet of flame fifteen feet long, a super-incendiary bomb developed for the Royal Air Force is said to be the most devastating of its kind. The bomb, dropped by parachute, weighs 30 lbs. and is enclosed in a 21 inch cylinder. It is claimed that it developed heat enough to crumble a brick wall. The flame lasts about two minutes.

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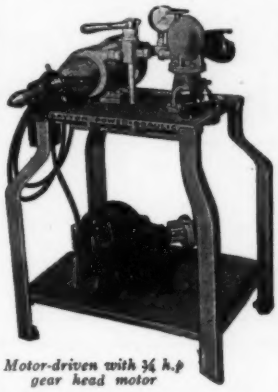

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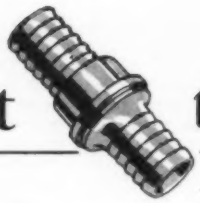
From the smallest  to the largest ELKHART means *Quality!*

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FEBRUARY, 1945

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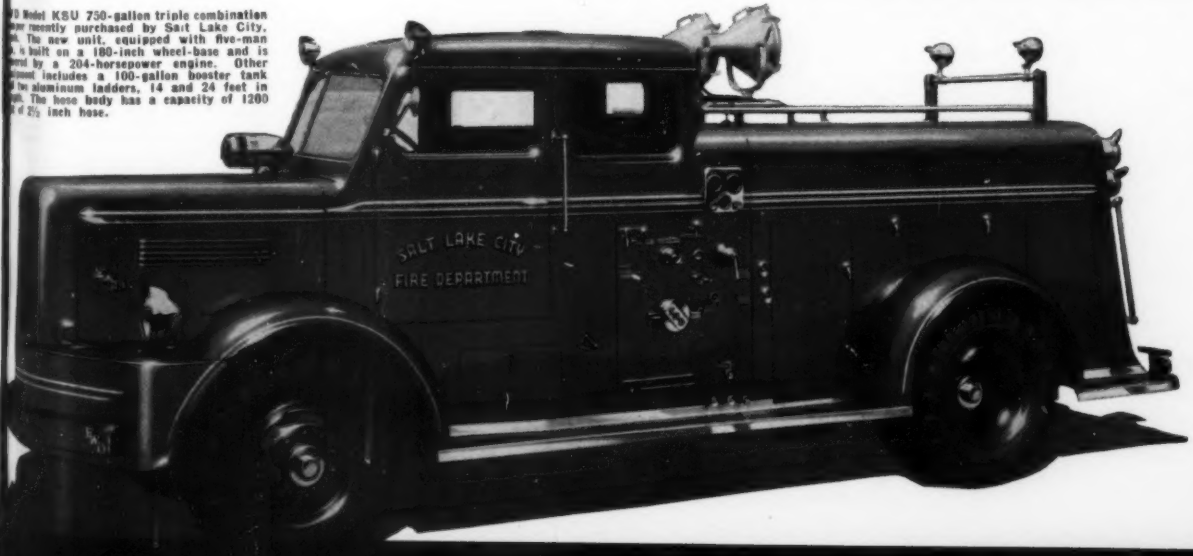

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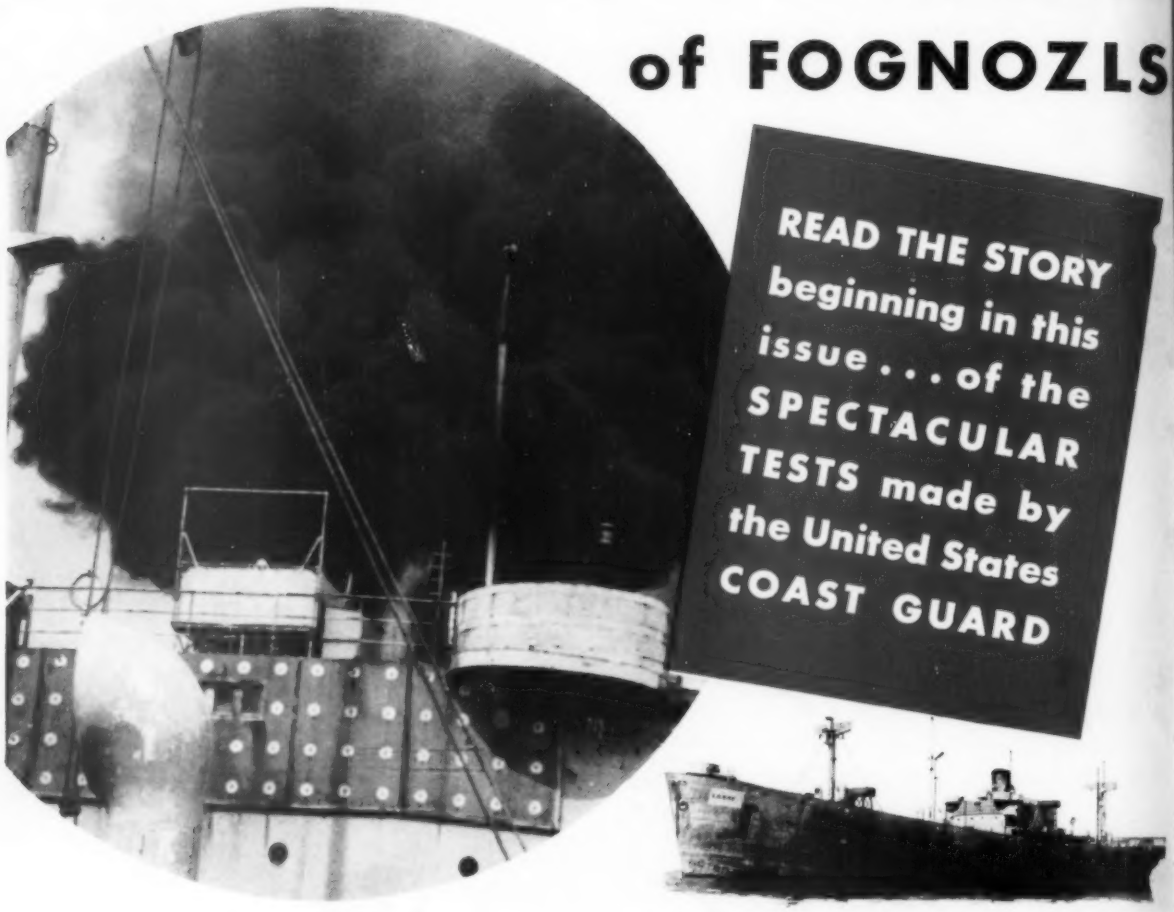

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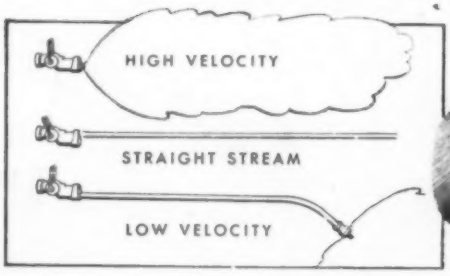
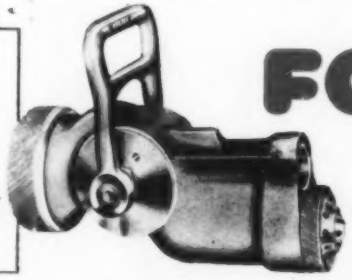
A few exceptional sales opportunities are available in some sections for aggressive representatives.

PRIORITIES FOR THE PURCHASE OF FOGNOZLS ARE NOW EASILY OBTAINABLE





ALL PURPOSE

FOGNOZL

REGISTERED

FOG NOZZLE COMPANY

1520 EAST SLAUSON AVE.
LOS ANGELES 11, CALIF.

EXCEPTIONAL SALES OPPORTUNITIES AVAILABLE FOR A FEW AGGRESSIVE REPRESENTATIVES